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ABSTRACT

The eight papers in this compendium were commissioned from faculty and staff members to provide a research and theoretical base for selected components of a University of Kentucky report on a teaching experience involving mainstreamed elementary school children. That experience was reported in "Perspectives of an Ivory Tower Realist," a monograph written by Catherine V. Morsink. Authors are from the University's Departments of Curriculum and Instruction, Educational Psychology and Counseling, Social and Philosophical Studies, Special Education, and the Office of the Dean. Educating handicapped children in the least restrictive environment was the theme of all of the papers, which reflected components of the knowledge base in one or more of four areas: teaching basic skills; classroom management; individualized instruction; and professional values. Articles are included on: (1) educational program evaluation: an overview of data based instruction for classroom teachers; (2) individualizing instruction in the mainstreamed classroom: a mastery learning approach; (3) the relationship between teacher attitudes and values in mainstreaming the minority child; (4) a model for reading instruction of children with learning disabilities based on functional literacy; (5) teaching spelling and writing skills in the mainstreamed elementary classroom; (6) crisis intervention: behavior management of mildly handicapped children in a mainstreamed setting; (7) mainstreaming: implications for regular teachers and special education teachers from research in general classroom management; and (8) values, cultural diversity, and classroom practice: the dilemma of unfulfilled expectations. (JD)

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Toward a Research Base for the Least Restrictive Environment: A Collection of Papers

Dean's Grant Project
University of Kentucky
Lexington, Kentucky
January 1981

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FOREWORD

The eight papers in this compendium were commissioned by the College of Education Dean's Grant Project at the University of Kentucky in order to provide a research and theoretical base for selected components of a report on a classroom teaching experience involving the "mainstreaming" of a group of elementary school children. That experience, a semester long assumption by an experienced teacher educator of regular teaching duties in a third grade classroom including a number of children with special learning needs, is reported in Perspectives of an Ivory Tower Realist, a monograph authored by Catherine V. Morsink. Dr. Morsink, presently chairperson of the Department of Special Education at the University of Florida, was previously co-director of the University of Kentucky's Dean's Grant Project.

The staff of the project judged the quality of the papers solicited to be high and to possess a utility extending beyond the original objective for many of our own College of Education faculty as well as for other Dean's Grant projects.

The papers were written by faculty and staff members representing the department of Curriculum and Instruction, Educational Psychology and Counseling, Social and Philosophical Studies, Special Education, and the Office of the Dean. While style, format, and content are unique to each author, all papers relate to the common theme of educating handicapped children in the least restrictive environment. Viewpoints are diverse, ranging across a continuum from philosophical and theoretical perspectives to practical applications. All, however, reflect components of the knowledge base in one or more of four areas: teaching basic skills, classroom management, individualized teaching, and professional values.

This collection is not intended to provide a comprehensive review of

the knowledge base relevant to teaching in a "mainstreamed" classroom. Rather, it offers a review of several topical areas associated with elementary teaching with the objective of facilitating movement toward the least restrictive environment for children with handicaps.

Implicit in the thinking of those of us who requested and received the papers was a conviction that good teaching has generic components appropriate to the facilitation of learning in all children. Implicit also was a conviction that an appropriate blending of theoretical and practical knowledge about teaching can help provide a healthy learning environment for all.

George Denemark
Dean, College of Education
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January 1981

TABLE OF CONTENTS

FOREWORD
George Denemark iii

EDUCATIONAL PROGRAM EVALUATION: AN OVERVIEW OF DATA BASED INSTRUCTION FOR CLASSROOM TEACHERS
David L. Gast and Kathy Boyle Gast 1

INDIVIDUALIZING INSTRUCTION IN THE MAINSTREAM CLASSROOM: A MASTERY LEARNING APPROACH
Thomas R. Guskey 31

THE RELATIONSHIP BETWEEN TEACHER ATTITUDES AND VALUES IN MAINSTREAMING THE MINORITY CHILD
Mattie Hemenway, Ernest Middleton, Gary Pruitt 47

BEGINNING WITH FUNCTIONAL LITERACY
Elfrieda H. Hiebert 61

TEACHING SPELLING AND WRITING SKILLS IN THE MAINSTREAMED ELEMENTARY CLASSROOM
Elizabeth Nelli 79

CRISIS INTERVENTION: BEHAVIOR MANAGEMENT OF MILDLY HANDICAPPED CHILDREN IN A "MAINSTREAM" SETTING
C. Michael Nelson 107

MAINSTREAMING: IMPLICATIONS FOR REGULAR TEACHERS AND SPECIAL EDUCATION TEACHERS FROM RESEARCH IN GENERAL CLASSROOM MANAGEMENT AND TEACHER EFFECTIVENESS
Norma Nutter 129

VALUES, CULTURAL DIVERSITY AND CLASSROOM PRACTICE: THE DILEMMA OF UNFULFILLED EXPECTATIONS
Richard L. Warren 159

Educational Program Evaluation: An Overview of Data Based Instruction for Classroom Teachers

DAVID L. GAST and KATHY BOYLE GAST
Department of Special Education

Educational Program Evaluation: An Overview of Data Based Instruction for Classroom Teachers. David L. Gast, Ph.D. and Kathy Boyle Gast, M.A.

The IEP: A Mandate for Program Evaluation.

Subsequent to the passage of P.L. 94-142, there has been an influx of literature pertaining to the individual education plan (IEP). Included are overviews of the mandated components and merits of this document, (BEH, 1979; Ballard and Zettel, 1977; Weintraub, 1977), the modus operandi of the IEP, (Haring, 1977; Morsink, 1979[a]; Hayden and Edgar, 1978), the loopholes, barriers, and problems with implementation of the plan, (Pugach, 1979; Morsink, 1979[b]; Geiser, 1979; Goldstein, Strickland, Turnbull and Curry, 1980), and parents' and teachers' perceptions and queries about its value (Davidson, 1979; Aiello, 1979; Mott and Yeager, 1979; Schleifer, 1979). Incorporated in such literature has been repeated mention of the need to objectively evaluate the results of efforts made towards reaching the goals stated in IEP's "for determining, on at least an annual basis, whether the short term instructional objectives are being achieved" (Sec. 121a. 346, Federal Register, 1977). However, the qualifier "at least" is often overlooked, whereupon evaluations are annual, "at best."

To go beyond perfunctory "paper compliance" with the static assessment of a child's progress annually, it is necessary to evaluate and measure the efficacy of a child's program on a frequent and regular basis. The pre-test/post-test methods of determining pupil performance are only the peripheral ends of a continuum of evaluating and monitoring individual education plans. Systematic procedures that result in formative data, from which decisions of program maintenance and modification can be made, are imperative if the IEP is to be a truly functional tool for assuring appropriate education for exceptional children.

Some of the literature has directly addressed the issues of evaluating the IEP (Dunst, 1979; Anderson, 1978; Jones, 1978; Costanzo and Repinski, 1979), providing general "monitoring" guidelines. Model instructional programs and

systems for individualizing instruction offer methods of program measurement (Deno and Mirkin, 1977; Tawney, Kruse, Cegelka, and Kelly, 1977; Stephens, 1976; Rieth and Hall, 1976; Kozloff, 1974; Kunzelmann, 1970). The procedures pivot on the philosophy that solutions for learning and behavior problems (i.e. effective programming) must stem from measurement, evaluation, and decision-making that are based on frequent and reliable data collection. However, these procedures can become cumbersome and time-consuming. Little information has been provided that lends itself to efficient procedures and systems that can be readily utilized by both regular and special educators to monitor child performance on a regular basis. Methods for accomplishing such objective evaluation of a child's program that would be well received by those educators responsible for such duties, as well as adaptable to a variety of educational settings, have scarcely been made accessible (Carr, 1979; Nelson, Gast, and Trout, 1979).

The idea of keeping precise and reliable data is often looked upon as being prohibitive by many special and regular educators, who are now required to assume responsibility for teaching children with a wide range of individual educational differences. The changes demanded of school systems and their teachers (particularly of regular classrooms) via judicial mandates, though not insurmountable, are nevertheless extensive. The teaching of behaviors that are necessary for individuals to function in less restrictive environments requires methodological and strategical changes from typical modes of instruction utilized heretofore in regular classrooms. Concern and confusion (in spite of recognition of the need) as to how to effectively deal with the increase in behavioral differences in the classrooms as "mainstreaming" attempts are made, is rampant.

Part of the confusion over mainstreaming stems from the accompanying

requirement of individualizing instruction. Teachers often misconstrue the idea of individualized instruction to mean that all instruction must be provided in a 1:1 instructional arrangement. This is not necessarily the case. Individualized instruction does mean that educational objectives should be pinpointed and programs implemented on the basis of each learner's level of competence, learning characteristics, and motivational structure; when students are taught in a group setting, individual objectives should not be abandoned. Teachers can work on each learner's objectives when the learner is in a variety of settings--from 1:1 instruction, to small groups, total class, or self-instructional arrangements. Considering the mainstreamed child, such diverse instructional environments are not only practical to the teacher, but advantageous to the learner, for they enhance skill generalization across conditions.

There is little room left for argument that each child's educational needs warrant (much less necessitate) "tailor-made" programming. In addition, teachers must demonstrate that these programs are beneficial and appropriate for the child; otherwise, alterations must be made. Effectiveness of changes in instruction cannot be assumed with any great certainty. Such changes can only be treated as hypothetical until they are empirically verified per child, and a decision, based on the data, can be made to determine program efficacy for each child. The success of an exceptional child's instructional program should be evaluated on the basis of the rate at which he/she moves towards functioning effectively in more normal environments (Deno and Mirkin, 1977). Determining such rate of progress cannot be adequately based on the information provided by standardized tests administered biannually or annually; rather, the gathering of empirical information on a regular basis is needed.

Prefacing the measurement for effective evaluation of a child's individualized educational program is the development of a functional program, i.e.

specification of instructional objectives towards which the child can move. To accomplish this, the child's present level of functioning must be determined. Again, precise measurement of specific skills, (far beyond "reading level--2.5"), is necessary to accurately determine what skill strengths and deficits are present, and to what degree skills are deficient. Only then can valid goals and objectives be developed and prioritized for further breakdown of task components that need to be taught. Systematic measurement of specific skills can provide data that will lend itself to program planning (the IEP) that can be utilized to specify target objectives. In turn, the measurement of specific objectives and the resulting data can provide a basis for decision making relative to programs in progress.

Such an approach to achieving instructional programming that is conducive to learning is based upon an interactional model of child development (adhered to by the authors), as discussed by Bijou (1976, 1977a, 1977b). The model consists of two basic assumptions. First, there is an interaction between the biologically developing child and changes in his/her environment that is continuous. Second, such interactions change the individual (develop a "unique" person), as well as change the environment.

Inherent in this model is the use of the learner's abilities and strengths rather than the presumed limitations or weaknesses as the bases for educational goals. The interactional model requires the individualization of instruction for each child, based on his/her developmental status and the environment in which the child will be interacting. Such instruction should stem from educational goals or objectives that are stated in observable terms. Mager (1962) and Wheeler and Foxx (1972) provide acceptable formats for stating instructional objectives. Each objective should consist of three components: (1) a statement of the behavior, (2) a description of the conditions under which the behavior

is to be emitted, and (3) a statement of the criteria for skill mastery. For example:

BEHAVIOR

The learner will orally produce the phonetic sound /m/

CONDITIONS

when shown the printed symbol "m" and requested to do so,

CRITERIA

on 5 out of 5 trials, for 3 consecutive sessions.

By stating instructional objectives in such a way, it is possible to objectively measure student performance. Otherwise, establishing educational goals is reduced to a mere academic exercise. To further facilitate effective instruction, it may be necessary to task analyze, or "break down" a particular objective into smaller "subtask" components. Such analysis of a task depends upon the complexity of the chain of responses necessary to master a particular skill, as well as the individual's repertoire of skills previously mastered (prerequisite skills, or entry behaviors). For example, if a child is to meet the following instructional objective:

> "Given ten printed addition problems, whose sums are less than or equal to 10, the student will correctly write each sum within 5 minutes, over 3 consecutive sessions.",

the child should demonstrate mastery of each of the following skills:

1. Counts orally 1-10, on 5-5 trials, over 3 consecutive sessions. (Note: criteria for steps 2-13 same as step 1)
2. Counts orally from any number 2-9, up to 10 (e.g. counts from 3 to 7; from 5 to 8, etc.)
3. Counts 1-10 concrete objects and orally states the correct (total) number of objects.
4. Counts a variety of printed "objects" or symbols (e.g. stars, circles, lines, etc.) and orally states the correct (total) number, 1-10.

5. Visually recognizes all numerals 1-10.

6. Matches the correct number of printed objects to the corresponding printed numeral, 1-10.

7. Writes all numerals, 1-10, without a model, in sequence and random order.

8. Given any 2 printed numerals 1-10, writes the corresponding number of lines, circles, ("marks") that each numeral represents.

9. Given two sets of printed objects or symbols, accurately counts each set and orally states/writes the correct number/numeral representing the total amount (sums up to 10).

10. Shown the printed plus sign, (+), orally states, "plus," and/or "and," and states the sign means to "add" or "put together."

11. Shown the printed equal sign, (=), orally states, "equals" and/or "is," and states the sign means, "same as."

12. Shown a printed "number sequence" (e.g. *** + **** =), orally counts each set of circles (lines, etc.), states "plus" and "equals," and states/writes the correct total amount (sums up to 10).

13. Shown printed addition problems, whose sums are less than or equal to 10, writes corresponding numbers of lines (circles, etc.) for each numeral, counts total number, and writes correct numeral, (after equal sign), representing total amount.

14. Shown printed addition problems, whose sums are less than or equal to 10, correctly writes the numerical sum within 5 minutes, on 5-5 trials, over 3 consecutive sessions.

Instruction should begin at whatever step the child does not demonstrate mastery, and should follow the appropriate sequence, assuring mastery at each step. Analysis of tasks such as the one described above will provide the teacher with specific behaviors that can be measured and evaluated to determine performance and progress of the child, and the need, if it exists, to alter the instructional sequence.

A teacher ascribing to the interactional model of child development will not attribute program failure to the learner. Hypothetical learner characteristics ("He's lazy," "She's retarded") are unacceptable reasons for explaining

failure of a program. Rather, such failure is attributed to the program itself. Lack of a learner's progress is a function of inappropriate: (1) skill sequence (e.g. learner lacks prerequisite skills), (2) response requirement, (3) method of facilitating responses, and/or (4) method of consequating responses. (Bijou, 1977). Evaluation of the individualized instruction on a regular basis can avoid program failure.

By functionally defining teaching as inducing positive behavior change (i.e. learning), individualized instruction becomes required, not only by law, but if such change (learning) is to occur.

The intent of the IEP is that it be used as a monitoring tool to assure that each child's program is appropriate, is being implemented, and that objectives are in progress (BEH, 1979). The monitoring of programs should be extended beyond the typical annual review to include regular evaluation by those teachers responsible for all or part of the educational plan. This requires that teachers be proficient in skills of measurement and data-based program decision making.

Program Evaluation: A Rationale for Teachers

The challenging and creative aspect of teaching is identifying instructional programs which match each individual student's style of learning (instructional arrangement, pace, materials, reinforcers, etc.). Only through frequent, systematic, and reliable program evaluation can teachers determine the efficacy of their instructional decisions. The decision to measure program effectiveness does not require adherence to any particular theoretical orientation. Systematic data collection on student performance represents a teacher's interest in determining the effectiveness of an educational program for appropriate program decision-making.

When requested to collect child performance data, a typical teacher response is, "I don't have time to collect data; I have to teach." Such an argument reveals

an inherent misunderstanding or misconception that teaching and data collection are incompatible behaviors. This need not be the case. It must be realized that frequent and systematic program evaluation can save time in the long run, eliminating the continuation of ineffective instructional strategies.

Simply stated, data collection or program evaluation has one purpose: "to determine whether to keep a program or modify it" (Bijou, 1977). It serves no purpose to collect data on the effectiveness of a program unless the data are used to facilitate the decision-making process. In fact, teachers should avoid the "trap of recording any and all behavior, simply for the sake of data collection" (Scott and Goetz, 1980, p. 66). An appropriate guideline for teachers to follow is to ask the question, "To what practical end can the data be used?" Practicality is a key factor when collecting data, both in terms of what data are to be collected, and how often data are to be collected. Data simply confirm the effectiveness or ineffectiveness of a particular intervention with a particular student.

Though there may be some response cost during the initial phases of the data collection process, the benefits derived from the time spent will justify the effort. Scott and Goetz (1980) discuss some of the benefits that teachers will realize by adopting a data-based orientation to teaching. Summarized, data collection can facilitate a teacher's: (1) understanding of a student's strengths and weaknesses; (2) general observational skills; (3) awareness of a student's emerging or recurring behaviors; (4) effectiveness in interacting with ancillary personnel (speech therapists, educational psychologists, social workers) by providing more accurate information; and (5) monitoring program effectiveness, permitting program modification before valuable teacher and student instructional time is wasted.

Few studies in the literature have evaluated the effects of teachers, as

data collectors, on student behavior and the teaching process. Preliminary findings of one such study by Scott and Goetz (1980) suggest that student-teacher interactions may be affected, but to an insignificant degree, and certainly not to the extent that their teachers had predicted. Their position is made clear; the advantages of data collection to both student and teacher far outweigh the minimal inhibitive effects data collection may have on student-teacher interactions. As teachers become more proficient in their selection and use of observational recording systems, the response cost to teachers will be minimized further. Data collection must be individualized (i.e. the type of data collected and the recording system employed will depend upon the type of information sought). Parsimony coupled with practicality should be the rule. Collecting data that will not be used, and using recording systems that lack simplicity and economy should be avoided. The measurement should be as simple as possible and still provide the necessary information upon which program decisions can be based.

Parameters of Measurement

In determining what to measure, the first rule is for teachers to insure that target behaviors are defined in observable and measurable terms. The primary criteria for determining the adequacy of a behavioral definition is the degree to which two independent observers agree they have observed the same behavior in the same student during the same observational period (Hall, 1971). Interobserver agreement that is ninety percent or greater is considered acceptable. Lower percentages of agreement may be acceptable (80%) depending upon the behavior being recorded. However, the higher the percentage of interobserver agreement, the more precise is the behavioral definition and the data collection procedure. Periodic independent reliability checks (weekly) are recommended to insure that the data collected are reliable and the target behavior, not the observer's recording of the behavior, is changing.

Several types of dependent measures are available to teachers for monitoring student performance. Measures frequently used by teachers include: number (e.g. number of words spelled correctly); frequency or rate (e.g. number of words read correctly per minute); percent correct (e.g. percent of addition problems performed correctly per page); duration (e.g. number of minutes it takes a student to complete a division problem); and latency (e.g. number of seconds it takes a student to return to his desk after instructed to do so by the teacher). Other measures are also available to the classroom teacher but are less frequently reported (e.g. magnitude, intensity, trials to criterion, errors to criterion). The type of dependent measure selected will depend upon the target behavior and the instructional objective. For example, an appropriate objective for a student who reads accurately but slowly would be to increase the number of words accurately read per minute. For another student, who reads at an acceptable rate but makes a large number of errors, an appropriate objective would be to increase the percent of words he/she reads correctly. In selecting a dependent measure it is important to base the decision on the intended purpose of the instructional program (to increase rate, to increase percent correct, or both).

The selection of a recording system is critical to the data collection process. A commonly used measurement system in education is the direct measurement of permanent products. This includes tangible products that can be observed and counted (e.g. a student's written responses to a series of math problems). Unfortunately, not all behavior which is of interest to the teacher readily yields permanent products (e.g. oral reading). Therefore, it is important for teachers to be competent at using a variety of direct observational recording systems. Several direct observational recording systems have been recommended by Hall (1971), Hawkins, Axelrod and Hall (1976), and Scott and Goetz (1980) for classroom use. These include: event recording (a frequency count of behaviors

as they occur); duration recording (timing how long a behavior is in progress); interval recording (dividing an observation period into equal time periods and recording the occurrence of behavior during these intervals); and time sampling (dividing an observation period into equal time periods and recording the occurrence of behavior at the end of each interval). It is beyond the scope of this paper to detail each of the above recording systems. The interested reader is directed to Hall (1971) who provides a concise discussion of direct observational recording procedures, including basic guidelines for their use.

A variety of devices and techniques which can assist data collection efforts are available to teachers. To name a few, audio cassette recorders, wrist counters, kitchen timers, bead bracelets and belts, stop watches, and time-interval calculators (such as the Casio ST-24 and PW-80 models) have been used by applied researchers to assist in their data collection efforts. All of the above devices are available commercially at a nominal cost (less than forty dollars), making them accessible to school districts and teachers. As an example, the progress in increasing a child's reading rate can be checked by having the child independently tape record an orally read passage, which can be played back later to determine the number of words correctly read within a particular number of minutes. Other devices that can facilitate the collection of data can be made with classroom or other readily-available materials. For example, "mini-data" sheets made on file cards and taped to an individual child's desk can be used for recording a tally mark per assignment completed within a certain time period. A child's independent instructional activity, such as counting out pennies, buttons, clothespins, etc. and dropping them into cans or jars with different numerals printed on them, can be checked later by the teacher to determine the child's number of correct counting responses.

Monitoring Student Performance

A general rule for determining how frequently a student's performance should be evaluated on an instructional program is, "frequently, but only after the program has had a fair chance to operate." (Bijou, 1977, p. 11). Although daily measures are considered ideal, they may prove impractical because of demands placed on the teacher. Weekly measures typically are considered the minimum acceptable frequency for evaluating student progress. Not to evaluate weekly runs the risk of continuing an ineffective program which wastes student and teacher time, and which may produce inappropriate interfering behaviors on the part of the student.

Continuous measurement (i.e. daily, session by session, or trial by trial data) can provide the teacher constant feedback upon which to base program decisions. A number of teaching systems, such as Precision Teaching (Kunzelmann, 1970), Directive Teaching (Stephens, 1976), Responsive Teaching (Rieth & Hall, 1976) and Data-Based Program Modification (Deno & Mirkin, 1977) include continuous measurement of student progress as an integral part. Although continuous measurement yields a wealth of information upon which teachers can base their program decisions, such rigor may at times prove impractical.

An alternative to continuous measurement is noncontinuous or intermittent measurement. For example, rather than evaluating a student's performance every instructional session, progress is measured every other session. Although data are not collected daily, they are collected frequently, allowing the teacher to modify the program, if necessary, without wasting instructional time. As with continuous measurement, noncontinuous measurement requires that the data be collected systematically and reliably, using one of the previously described direct observation recording systems. The implementation of a noncontinuous measurement strategy may provide the teacher with information relative to student progress on a particular program. If it does not, a continuous measurement

strategy can be adopted. The particular strategy employed will depend upon the type of information sought, and the intensity and precision of the teacher's programming. Generally, weekly measures, using a noncontinuous measurement strategy, will suffice in providing the teacher with feedback regarding student progress.

To date, few monitoring systems appropriate for classroom use and documenting student performance have been reported in the literature. Carr (1979) describes one such system referred to as Goal Attainment Scaling. This method involves "devising a set of goals with involved persons, assigning weights to these goals, developing a set of expected outcomes, and calculating a summary score of the outcomes across goals" (p. 88). "The Goal Attainment Scaling System" is a versatile method for monitoring student performance which encourages student participation, and merits consideration by teachers working with mainstreamed mildly handicapped children. Though Carr (1979) exemplifies the use of the system using quarterly measures, more frequent measures could (and should) be used.

A second monitoring system for following student progress has been described by Nelson, Gast, and Trout (1979). This system, referred to as the "Cumulative Charting System," can be used to monitor and evaluate student progress toward individual instructional objectives on a continuous or noncontinuous basis. The cumulative charting system offers several advantages: it is easy to use; it is not excessively time consuming; it accurately represents student progress; and it provides a clear visual display of student progress, facilitating communication with interested persons.

The summary chart presented in Figure 1 is one way of monitoring and evaluating student progress toward short term objectives, or a task analysis sequence of a short term objective. Figure 2 shows how the task analysis sequence of a short term objective; "Given ten printed addition problems whose sums are less

subject design (Hersen and Barlow, 1976). Baer, Wolf, and Risley (1968), Birnbrauer, Peterson, Solnick (1974), and Hersen and Barlow (1976) have provided excellent reviews of single subject designs and their application in applied settings.

Basically, there are three types of single subject research designs available to teachers interested in evaluating the effectiveness of their instructional programs: (1) reversal designs (2) multiple baseline, multiple probe, and changing criterion designs; and (3) multielement or multiple schedule designs. The most basic of these designs is the reversal, commonly referred to as the ABAB. Simply stated, the reversal design begins with a baseline phase (A) during which the natural frequency of the target behavior is recorded (i.e. pre-intervention); an intervention phase (B) is then introduced followed by a reintroduction of baseline conditions (A_2) which is in turn followed by a reintroduction of intervention conditions (B_2). This alternation of baseline and intervention conditions permits a comparison of student responding under two different environmental conditions. If, for example, a student consistently responds with greater accuracy during intervention phases than during baseline phases a strong case can be made that a functional relationship exists between the intervention (i.e. independent variable) and the target behavior. Though the reversal design is a powerful tool for evaluating program effectiveness, it has its drawbacks. Frequently, a target behavior cannot be reversed (e.g. spelling, multiplication facts, reading), thereby making it difficult, if not impossible, to retrieve initial baseline levels of responding. In addition, ethical problems can arise when employing a reversal design. For example, if a teacher has successfully designed an intervention package to increase a student's "on task" behavior, she is likely to be questioned by parents and administrators as to why she withdrew a successful instructional program. She may also find herself confronted by staff who are resistant to return-

ing to old habits after having discovered more successful patterns of responding to the student. Too often reversal designs are thought to be the only single subject design available to the educator. This, however, is not the case.

When the target behavior is either irreversible (e.g. an academic behavior) or when it is undesirable to reverse (e.g. a disruptive behavior), a teacher may choose to evaluate the functional relationship between his/her intervention package and student responding by employing a multiple baseline design. There are three types of multiple baseline designs: (1) across behaviors; (2) across conditions; and (3) across subjects. Using a multiple baseline design across behaviors as an example, the teacher collects baseline data on several independent behaviors (e.g. spelling the words often, across, and carrier). After collecting baseline data on each behavior, the intervention (instructional) package is introduced with the first behavior (often) while continuing to collect baseline data on the other target behaviors (across and carrier). Once the student has met criteria on behavior one, the intervention package is introduced with behavior two. After behavior two is performed at criteria, the intervention package is introduced with behavior three. If the student's performance improves only after the intervention package has been introduced, the teacher has demonstrated that his/her instructional program was responsible for the student's change in performance. The more replications of the effect with other behaviors, the stronger the demonstration that a functional relationship exists between the intervention package and the student's improvement on the task. With the other two types of multiple baseline designs (across conditions and across subjects) the sequence of staggering the introduction of the intervention package is the same except that conditions (multiple baseline across conditions) and students (multiple baseline across subjects) serve as controls rather than behaviors.

A variation of the multiple baseline design is the multiple probe design.

than or equal to 10, the student will correctly write each sum within 5 minutes over 3 consecutive sessions," can be monitored using the cumulative charting system. In this example, both a code (T, X, /, ■, or -) and percent correct are recorded. It is, however, possible to use only the coding system or some variation as discussed by Nelson et al. (1979). The teacher may, of course, develop his/her own codes, provided each symbol is defined.

In addition to being used to monitor a student's performance on a task analysis sequence, the cumulative charting system can be used to monitor student progress on short term objectives toward mastery of long term goals. Figure 3 is an example of how the charting system can be used to monitor short term objectives and long term goals, as specified in an Individual Educational Plan. (Note: short term objectives on the chart are abbreviated forms of those contained in the IEP.)

Student progress may be assessed and recorded on the summary chart on a daily (Figure 2) or weekly (Figure 3) basis. The frequency of progress assessment may vary but should be completed at least weekly. It is recommended that each student have at least one summary chart for monitoring daily progress on short term objectives. Additional charts for monitoring daily progress on task analysis sequences should be used when careful monitoring of daily performance is required because of the complexity of the skill being taught and/or programming difficulties.

Single Subject Research Designs

Repeated measurement alone, using one of the previously described recording systems, will not permit a teacher to empirically demonstrate the effectiveness of a particular instructional program. In order to determine whether there is indeed a functional relationship between the instructional program and student progress repeated measurement must be paired with a rapidly changing single

The multiple probe design is similar to the multiple baseline design in that the independent variable is introduced to one behavior (or in one setting or with one student) at a time. Unlike the multiple baseline design, baseline data are not collected on a continuous basis on behaviors which have not yet been introduced to the intervention package. Rather, daily probe trials on these "to be trained behaviors" are conducted. These probes provide the teacher with data which he/she can use to determine whether the student is improving before the independent variable has been introduced. An alternative multiple probe design utilizes probe sessions rather than single probe trials. With such a design, baseline data are collected on several behaviors over the same period of time. The independent variable is then introduced with behavior one. After behavior one is performed at criteria one or more probe sessions are conducted in which all behaviors are intermixed and tested. Following this probe condition, the independent variable is introduced to behavior two; which is in turn followed by a second probe condition. This sequence of training and probing after criteria is reached on each behavior is continued until all target behaviors have been taught. As with the multiple baseline design, if student performance remains at or near baseline levels during probe conditions (or on probe trials) and improves only after the independent variable has been introduced, the functional relationship between the independent variable and target behaviors has been demonstrated. The multiple probe design is particularly well suited for the teacher interested in evaluating academic programs and who is unable to monitor all target behaviors on a daily basis. It should be noted that few studies have been reported which employed the multiple probe technique (Note 1, Note 2). The interested reader is referred to Horner and Baer (1978), Murphy and Bryan (1980), and Hall, Cristler, Cranston and Tucker (1970) for a more detailed description of multiple baseline and multiple probe designs.

A second variation of the multiple baseline design is the changing criterion design (Hall, 1971). The changing criterion design has been described by Hartmann and Hall (1971) as follows:

> The design requires initial baseline observations on a single target behavior. This baseline phase is followed by implementation of a treatment program in each of a series of treatment phases. Each treatment phase is associated with a stepwise change in criterion rate for the target behavior. Thus, each phase of the design provides a baseline for the following phase. When the rate of the target behavior changes with each stepwise change in the criterion, therapeutic change is replicated and experimental control is demonstrated. (p.527)

The changing criterion design is particularly appropriate to employ when a teacher is interested in evaluating instructional acceleration programs which progress in a stepwise progression (e.g. increasing math problem or oral reading rate). In addition, the changing criterion design should be considered when the educational objective is targeted at decelerating inappropriate behaviors (e.g. decreasing out-of-seat or talkout rate).

The third type of single subject design appropriate for classroom use is the multielement (Loos, Williams, and Bailey, 1977) or multiple schedule design (Hersen and Barlow, 1976). Unlike previously described single subject designs, the multielement (or the multiple schedule) design does not require the introduction of the intervention procedure to one behavior over several sessions before applying it to other behaviors. Rather, baseline conditions and intervention conditions are presented in alternation either within sessions or across sessions. The schedule of presenting a condition can be consistent or variable. For example, if free time is contingent upon completion of a math problem worksheet at 100% accuracy during the morning math period, this would be an example of a consistent schedule. If a student consistently met criteria during the morning period, but not during the afternoon period, then it <u>may</u> be concluded that the free time contingency was effective in increasing student performance. However, to eliminate the "<u>may</u>" it would be necessary to vary the contingency of free time from morning to afternoon

on a variable schedule across days. By doing so the instructor controls for the possibility that the student performs "better" in the morning than in the afternoon. That is, if when the free time contingency is in effect, regardless of whether it's during the morning or afternoon math period, the student consistently performs at criterion level and seldom, if ever, performs at criterion level when the contingency is not in effect, the teacher can conclude that there is a functional relationship between the free time contingency and meeting criterion. It is important to note that when employing a multielement design students must be able to discriminate which condition is operating (e.g. access to free time versus no access to free time). With many children the teacher can simply announce the condition before the period. Needless to say, there are several variations of the multielement design. The interested reader is directed to Sulzer-Azaroff and Mayer (1977), Redd, Ullmann, Stelle and Roesch (1979), and Murphy, Doughty and Nunes (1979) for a more detailed discussion and description of the multielement design and its variations.

Conclusion

Program evaluation is an integral part of the teaching process. If individual instructional strategies are to be identified, it is necessary that teachers frequently and systematically monitor student performance. Only through formative evaluation can educators base program decisions which facilitate student skill acquisition. Initially teachers may find data collection cumbersome; however, with experience they will reap the benefits of their efforts. The issue of accountability for educational programs should not be viewed by teachers as threatening. A more appropriate perspective would be to view frequent, systematic and reliable data collection as a process which can assist them in their teaching. An appropriate response to program evaluation has been offered by Bijou (1977), which states:

"If the data show that the child is making progress, you smile and continue with it; if they do not show the child has been making progress, you frown and say, 'I've got a problem.' You frown for only a second or two because this kind of problem solving is one of the creative challenges of teaching." (p. 11).

Figure Legends

Figure 1: Cumulative Charting System Format

Figure 2: Monitoring Student Performance on a task analysis sequence using the cumulative charting system

Figure 3: Monitoring Student Performance on short term objectives toward mastery of long term goals using the cumulative charting system

INSTRUCTIONAL PROGRAMMING SUMMARY CHART

CODES: T = Training In Progress
X = Assessed, Criterion Met
/ = Assessed, Criterion Not Met
[redacted] = Not Assessed, When Last Assessed Criterion Met
- = Not Assessed, When Last Assessed, Criterion Not Met

Short-Term Objective or Goal Statement

TASK COMPONENTS

24

8
7
6
5
4
3
2
11
10
9
8
7
6
5
4
3
2
1 28

Session: Date and/or Time

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40

STUDENT'S NAME _____ CLASS _____

TEACHER _____

29

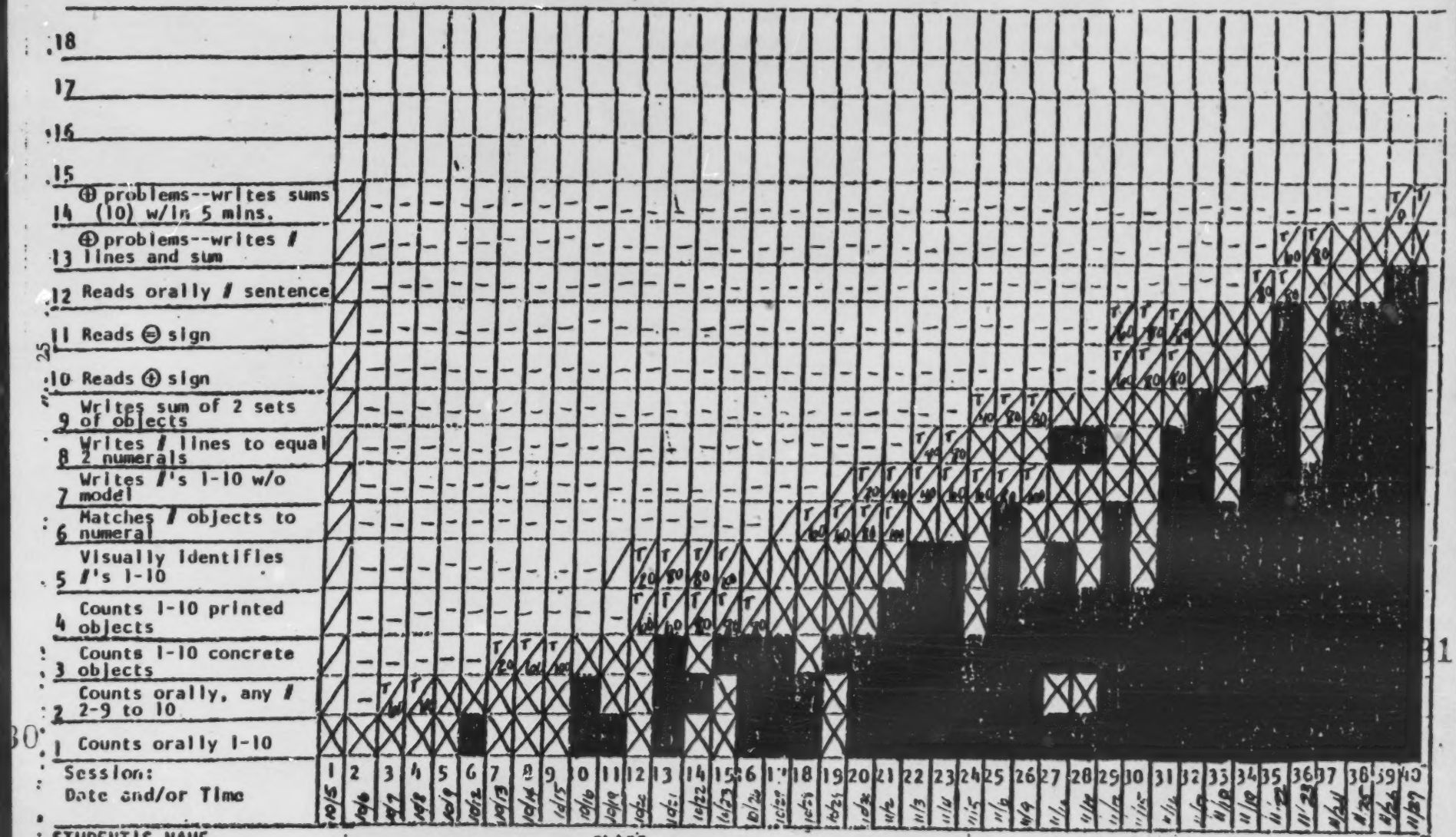
Figure 2

INSTRUCTIONAL PROGRAMMING SUMMARY CHART

CODES: T = Training in Progress
X = Assessed, Criterion Met
/ = Assessed, Criterion Not Met
▭ = Not Assessed, When Last Assessed Criterion Met
\- = Not Assessed, When Last Assessed, Criterion Not Met

Short-Term Objective or Goal Statement

Given 10 printed addition problems whose sums ≤10, S will correctly write each sum within 5 minutes, over three consecutive sessions.

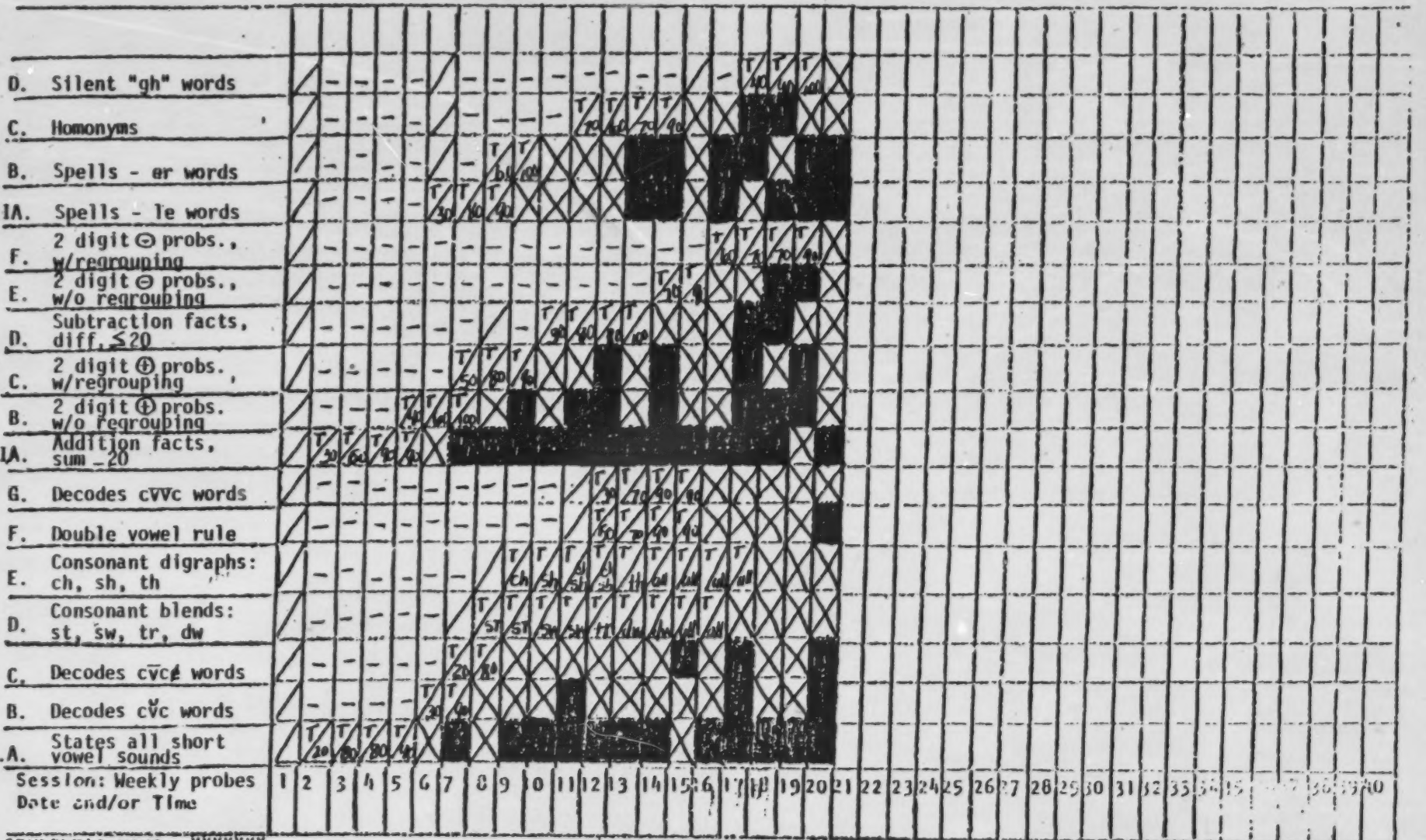

TASK COMPONENTS
18
17
16
15
14 ⊕ problems--writes sums (10) w/in 5 mins.
13 ⊕ problems--writes # lines and sum
12 Reads orally # sentence
11 Reads ⊖ sign
10 Reads ⊕ sign
9 Writes sum of 2 sets of objects
8 Writes # lines to equal 2 numerals
7 Writes #'s 1-10 w/o model
6 Matches # objects to numeral
5 Visually identifies #'s 1-10
4 Counts 1-10 printed objects
3 Counts 1-10 concrete objects
2 Counts orally, any # 2-9 to 10
1 Counts orally 1-10
Session:
Date and/or Time
STUDENT'S NAME
CLASS
TEACHER

INSTRUCTIONAL PROGRAMMING SUMMARY CHART

CODES: T = Training in Progress
X = Assessed, Criterion Met
/ = Assessed, Criterion Not Met
▭ = Not Assessed, When Last Assessed Criterion Met
- = Not Assessed, When Last Assessed, Criterion Not Met

Short-Term Objective or Goal Statement

I. Increase word attack skills
II. Improve math computation skills: + and -
III. Improve spelling skills


TASK COMPONENTS
D. Silent "gh" words
C. Homonyms
B. Spells - er words
IIIA. Spells - le words
F. 2 digit ⊖ probs., w/regrouping
E. 2 digit ⊖ probs., w/o regrouping
D. Subtraction facts, diff. ≤20
C. 2 digit ⊕ probs. w/regrouping
B. 2 digit ⊕ probs. w/o regrouping
IIA. Addition facts, sum ≤20
G. Decodes cVVc words
F. Double vowel rule
E. Consonant digraphs: ch, sh, th
D. Consonant blends: st, sw, tr, dw
C. Decodes cv̄c̄e words
B. Decodes cv̆c words
I.A. States all short vowel sounds
Session: Weekly probes
Date and/or Time
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40

STUDENT'S NAME XXXXXXX CLASS LD Resource Room

TEACHER XXXXX

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Individualizing Instruction in the Mainstream Classroom: A Mastery Learning Approach

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INDIVIDUALIZING INSTRUCTION IN THE MAINSTREAM CLASSROOM:

A MASTERY LEARNING APPROACH

With the enactment of the Education for All Handicapped Children Act (P.L. 94-142, 1975), large numbers of regular classroom teachers have found themselves in a very serious quandary. Most are strongly supportive of the philosophy of the act; that is, that every child - including the handicapped, the disadvantaged, and the gifted - should be helped to develop his or her interests and abilities to the fullest. But at the same time, many regular classroom teachers believe that they are psychologically and professionally unable to respond to the unique learning and emotional needs of exceptional children. Very little, if anything, in their training has prepared them to deal with children with so many different learning styles and achievement levels as are now being brought together in their classrooms (Dunn and Cole, 1979).

A central issue in this perplexing dilemma is concern over the process of individualizing instruction. Teachers are generally familiar with the ideas of individualization within the classroom. They are well aware of the fact that different children learn in different ways and that while one approach to instruction may be appropriate for some children, it is likely to be inappropriate for others. Most know that skills in individualizing instruction are essential in fulfilling the intent and the mandate of P.L. 94-142, especially in the preparation of individual education plans (IEP's). But experienced teachers are also keenly aware of the constraints of classroom management, the curriculum, and the school calendar. Individually attending to the needs of one child often means that 30 others must be left unattended. In addition, the majority of individualized instructional programs are strictly student paced, and as such, often result in even greater differences in the achievement levels of the children in a classroom over the

course of a school year. Particularly at the elementary level, motivated fast learners seem to accelerate their pace while slower, less self-motivated learners fall progressively further behind (Hunsaker and Roy, 1977). When this increasing variation is coupled with the demand that a certain amount of content be "covered" during a given school year so that children are adequately prepared for next year's work, individualization becomes extremely difficult to manage and in some cases is unrealistic.

In recent years, however, growing numbers of teachers have found that the teaching-learning strategies associated with "Mastery Learning" can provide them with useful solutions to these common classroom problems (Tiske, 1980). Simply stated, mastery learning instructional strategies provide teachers with flexible techniques to better individualize teaching and learning within the group-based classroom setting. Mastery learning certainly provides no educational cure-all for all of the problems classroom teachers must face. But in setting after setting, these instructional strategies have proven to be an exceptionally effective tool for teachers concerned with having all of the children in their classrooms learn, and learn very well, what they set out to teach.

Mastery Learning Theory

The important theoretical considerations underlying mastery learning were developed through the work of Benjamin S. Bloom of the University of Chicago. Bloom was interested in trying to find ways to provide students with the highest quality of instruction within the group-based setting of the classroom. Ideally, he hoped to devise techniques which would include many of the elements that are present in a positive, one-to-one student-tutor interaction, but which could be used by a regular classroom teacher who has charge of thirty or more students. To do this, Bloom first looked

at how the teaching-learning process is carried out in the typical classroom. He observed that in most cases, teachers divide all that is to be learned over the year or academic semester into smaller learning units. These units are sometimes sequentially ordered and often correspond to chapters of the basic text being used with the teaching. In some cases, units are defined in terms of instructional objectives (or behavioral objectives) which are outlined for teachers in an organized curriculum. After instruction covering the material or objectives in a unit, most teachers administer a quiz or test to check on learning progress. These quizzes usually signify to students the end of instruction on that particular unit. Quizzes are scored, results are recorded, and then instruction usually begins on the next unit. Unfortunately, it is typical to find that only a small portion of students in a class has really mastered the material or objectives within that unit.

In reviewing this instructional sequence, Bloom felt that checking on the learning progress of students with a quiz or test did little other than indicate to the teacher who was making it and who was not, unless it was accompanied by some sort of "feedback and corrective" procedure. That is, checks on learning progress could be used not only to certify competent learners, but also to diagnose individual learning difficulties (feedback), and to prescribe specific remediation procedures (correctives). This is precisely the process which takes place in the ideal student-tutor interaction. When the student does not understand a concept or makes an error, the ideal tutor first identifies the error, then re-explains the concept from a different perspective or in a different manner, and finally checks the student again before moving on.

The teaching-learning strategy devised by Bloom which included this feedback and corrective process was labeled "Learning for Mastery" (Bloom, 1968).

and later shortened to simply "Mastery Learning." The first step in teaching under a mastery learning format is not different from what most teachers do already; that is, the material to be learned over the year or the semester is first divided into smaller learning units. These units usually consist of material or learning objectives covered in about a week or two of instructional time, depending upon the pace of instruction determined by the teacher to be most appropriate. This, however, is different from many other individualized instructional strategies, in that under mastery learning the teacher has the primary role in determining the pacing of instruction (Guskey, 1981, in press).

Following instruction covering the material or objectives from that unit, a quiz or test is administered to check on learning progress. However, this test has a very different meaning from what is typical. Instead of signifying to students the end of instruction on that unit, it represents a check on learning progress to that point. It is usually not counted as part of a student's grade but rather is designed to provide precise feedback to both the teacher and students regarding which concepts have been learned well, or mastered, and which ones have not. Also included on the test are explicit suggestions to students as to what they might do to help correct their learning difficulties. These suggested correctives are specific to each item or part of the test and thus, each student needs to work on only those concepts which he or she has not yet mastered. In other words, the correctives are individualized. They are designed to identify for the student another, hopefully more appropriate approach to learning that concept. They may point out where in the text the concept was discussed so that those pages might be reread, they may identify an alternative learning resource such as a different text, cassette tape, film strip, etc., or they may simply indicate sources of additional

practice such as study guides or worksheets. Thus with the results from this "formative" test (Bloom, Hastings, and Madaus, 1971), each student has a very specific prescription of what more needs to be done to master the material or particular learning objectives from that unit.

Through this process of formative testing, combined with the systematic correction of individual learning difficulties, each student can be provided with a more appropriate quality of instruction than is possible under more traditional approaches to classroom instruction. If a teacher's initial approach to teaching a concept is inappropriate for some students in the classroom, another approach is made available. Under these conditions Bloom believed that virtually all students could learn very well and truly master the subject material.

Applying Mastery Learning Theory

Since the development of these theoretical ideas, programs incorporating mastery learning strategies in regular classrooms have been initiated in school systems across the United States. These programs have resulted in impressive gains in students' learning and achievement in large city school systems such as New York City, Chicago, Denver and New Orleans, as well as in smaller systems such as Lorain, Ohio; Johnson City, New York; and Red Bank, New Jersey (Fiske, 1980). Teachers familiar with Mastery Learning have generally learned about these instructional strategies through inservice education programs. Unfortunately, there is very little in the pre-service training of most teachers which truly prepares them for the possibility that almost all children, including exceptional children, can be enabled to master a given subject in a reasonable length of time (Cooke, 1979).

Probably the most commonly employed technique used to aid teachers in the application of mastery learning is a teacher/development approach (Guskey, 1980a).

By this method teachers are first trained in the theory and techniques of mastery learning strategies and then, individually or in teams, develop the materials they will need for implementing the strategies in their classrooms. In New York City for example, groups of teachers work in subject area or grade level teams during summer workshops to develop their mastery learning materials. Together, they organize their instructional objectives and develop formative tests so that they can incorporate the feedback and corrective process into their regular instructional sequence.

The tasks for a teacher or a group of teachers in this process of developing materials and teaching for mastery are usually divided into five steps: valuing, planning, managing, evaluating, and revising (Block and Anderson, 1975). At the initial valuing stage, each teacher reviews his or her instructional objectives and makes judgments about what material should be learned by all students and to what level. In other words, each teacher separates the important concepts and information from what might be considered trivial, and also decides whether students should be able to simply recall those concepts, or be able to apply them in a new and different situation, or synthesize them in a meaningful way, etc.

Sandra, a biology teacher in Chicago, noted for example that while she typically presents ten to twenty new terms in every unit, only a few are used again in other units and are important in understanding more advanced concepts. These are certainly the ones she wants all her students to know and to be able to apply.

Decisions such as these, which are a part of the valuing process, are usually outlined in lesson plans or in what is called a "Table of Specifications" (Bloom et al., 1971). Through this process teachers are compelled to think about the final criteria which will be used to evaluate student learning (the standard of mastery),

and also about the sequence of instruction that can optimally lead to mastery. In this manner, the evaluation of students can be based upon specific learning criteria rather than upon an arbitrary standard. Making these decisions is often found to be the most difficult step for a teacher in preparing to implement mastery learning strategies.

The next step is the planning stage. With the learning objectives and instructional sequence organized, attention now focuses upon preparing formative tests and accompanying corrective procedures. Again, a formative test is basically a diagnostic instrument used by the teacher to assess learning and to aid in planning corrective measures to remedy errors in the original instruction. As such, a formative test can take on many forms. For instance, Estelle, a fifth grade language arts teacher in Brooklyn, uses her students' letters and compositions as formative tests. She marks these writing samples with respect to what she has taught, and then provides specific directions to students as to how they can make improvements.

At the high school level a formative test typically covers the material presented in a chapter of the text used with the instruction, but it may be substantially less at lower elementary grades. The lesson plans and Table of Specifications serve as guides in preparing the formative tests. That is, each item, group of items, or part of the test (as in the case of a writing sample) is designed to get at a particular concept which has been identified as important to learning the subject material. In addition, paired with each group of items are suggested corrective measures which identify resources of information about that concept. These correctives may take a variety of forms and usually vary from one unit to the next. For instance, they may suggest alternative materials, peer or cross-age tutoring, or any type of learning activity which allows for differences in sensory or motivational preferences.

The effectiveness of the correctives, key to the successful implementation of mastery learning, is often assessed by an alternate, parallel-form of the first formative test for that unit. This test, administered after corrective work has been completed, covers the same material as the first, but asks questions in a slightly different way or in a different form. If the correctives have been successful in helping students to individually remedy the learning difficulties identified on the first formative test, almost all might be expected to attain "mastery" on this second, parallel-form test. To students, the second formative test represents a "second chance" to be successful. This sequence — instruction, first formative test, feedback, correction of learning difficulties, and second formative test— is then followed for each learning unit.

The final activity involved in the planning stage is the development of a final "summative" exam. This exam is much broader based and wider in scope than are any of the individual formative tests. It is designed to assess the criterion objectives of the course and is typically used for assigning student grades.

Having made the value judgments about what is to be learned or mastered, and having planned the learning tasks, tests and correctives, the teacher now centers on managing and coordinating learning within the group-based setting of the classroom. This step includes informing students of the intentions and procedures of mastery learning strategies, and then administering the cycle of instruction/diagnostic testing/correctives/diagnostic testing. Certainly the most challenging aspect of this procedure is managing the corrective work. Decisions need to be made regarding what amount of class-time versus out-of-class time to allow for correctives, and whether students who have mastered the material should be utilized to aid those who have not versus

providing those successful students with opportunities to extend their original learning.

These decisions need to be made on an individual basis by each teacher. For example, Millie, a sixth grade mathematics teacher in New York City uses peer-tutoring in her classes to help students in their corrective work. She finds that students seem to enjoy opportunities to help one another and often strengthen their own understanding by re-explaining the concepts and procedures. However, Fred, a third grade teacher in the same school finds peer-tutoring unmanageable. He uses many more teacher directed activities to help his students correct their learning difficulties. Both are excellent mastery learning teachers.

Usually, no one corrective approach will work all of the time. Variation is necessary in order to maintain students' motivation. Typically, about ten percent additional time is needed for the corrective process, with more needed during the early stages and less later on.

After managing the implementation of mastery learning strategies, the final step is for each teacher to evaluate the final competence of students through the use of the summative exam and then to reflect upon how to revise the strategies for future instruction. Ideally each teacher should find that close to 80 percent of students in the class attain the mastery level of achievement that was previously attained by only about 20 percent. Moreover, mastery learning strategies are designed not only to increase the level of student achievement, but also to decrease the variability in achievement among students with respect to the instructional objectives (Bloom, 1976).

Implication for Teachers and Children

Although mastery learning strategies have been successfully applied in a very wide variety of contexts and educational settings over the last

decade (see Block and Burns, 1976, Guskey and Monsaas, 1979; Ryan and Schmidt, 1979), the special benefits of these instructional techniques for exceptional children and teachers in mainstream classrooms have only recently been called to attention (Guskey, 1980b). Perhaps most important among these benefits is the change that mastery learning strategies bring about in the classroom teaching-learning process. In a more traditional classroom setting, learning is a very competitive activity. Children compete among themselves for the few scarce rewards (high grades) to be given out by the teacher. When placed in this type of setting, exceptional children can be truly disadvantaged. At the same time, the introduction of individualized programs into this competitive setting often tends to leave exceptional children isolated in their learning. Working on their own, they are often denied opportunities to interact with their classmates and to become a part of the classroom social and academic network.

Under mastery learning, however, learning becomes a cooperative rather than a competitive endeavor. In a mastery learning classroom, children come to see themselves and the teacher as both on the same side, out to "master" what is to be learned. For children this means that it is no longer detrimental to one child's chances of success to help another child be successful too. Grades are distributed in terms of what has been learned or mastered, not in terms of relative standing among classmates. Teachers involved in mastery learning programs consistently remark how supportive their children become of one another. In many cases, peer-tutoring occurs almost spontaneously as children urge each other to do well (Stahman, 1980). There is also strong research evidence that children become more involved in instructional activities and enjoy them much more under cooperative rather than competitive conditions (Hammond and Goldman, 1961; Haines and McKeachie, 1967; DeVries and Edwards, 1973; Wheeler and Ryan, 1973; Johnson and Johnson, 1975).

But in conjunction with these benefits, the change from a competitive to a cooperative teaching-learning environment presents a real challenge to teachers. No longer can they be simply managers of the competition among children. Instead they are compelled to be instructional leaders and learning facilitators working with all of their children, helping them in their learning and guiding them as they help one another.

Conclusion

Teachers must be prepared to deal with classrooms of children from a steadily broadening spectrum of learning styles and aptitudes. They must be prepared to individualize their instruction to meet the diversified educational needs of those children. At the same time, teachers must be prepared to deal with the real-world demands of classroom management, the curriculum, the school calendar, and a growing number of competency requirements. For many teachers mastery learning instructional strategies have provided a useful and purposeful technique for accomplishing a more individualized approach to instruction while dealing with practical classroom constraints. While furnishing no educational panacea, these strategies have provided teachers with a means to have a more powerful effect on the learning of their students. For students these strategies have provided a pathway to success in learning, which is often a new and different experience. As Peter, a social studies teacher in Stamford, Connecticut reports, students are "gratified with achievement - discipline problems are almost eliminated. There is a big change. The kids are happy."

The regular classroom environment can place a great many limitations and constraints upon both teachers and students. Both beginning teachers and practicing teachers need to become facile with techniques such as mastery

learning if they are to effectively deal with the constraints which are present in today's classrooms and provide for the diversified educational needs of today's students.

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The Relationship Between Teacher Attitudes and Values in Mainstreaming the Minority Child

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ABSTRACT

This paper discusses the detrimental effects of teachers' preconceived attitudes concerning mainstreaming and the minority child. Specific implications and suggested guidelines for school administrators and classroom teachers are addressed to help identify and alleviate the problem. It is suggested that due to the irrelevancy of the "traditional" curriculum to children of minority cultures, the curriculum must be updated to reflect the cultural plurality of the student population. Emphasis is placed upon the importance for school personnel being willing to reexamine personal values toward the mainstreamed minority child and to readjust accordingly.

THE RELATIONSHIP BETWEEN TEACHER ATTITUDES AND VALUES IN MAINSTREAMING THE MINORITY CHILD

Over the past decade one of the main concerns of mainstreaming programs in public schools has been the mistreatment of the minority child. Earlier experiences involving federally mandated busing and desegregation have shown that efforts at ability grouping or tracking students according to academic performances, has often led to resegregation. In mainstreaming, one of the primary concerns of minorities is teacher attitudes and values involving stereotyping and expectations concerning the minority child. Mercer (1973) reported that Black children and Mexican-American children were placed in self-contained special classes, in particular those for the mentally retarded, at a much higher rate than the placement rate of Anglo children. This disproportionate rate is taking into consideration the differences in the total numbers of each group. The rates of placement were found to be three times greater for Black children and four times greater for Mexican-American children placed in special classes. In another study, Simmons and Brinegar (1976) found that surveying statewide enrollment in EMR classes in California, that in 1969 although minority (Black and Mexican-American) students made up only 24.1% of the entire public school population, they were responsible for 55.3% of the total EMR population. This figure dropped slightly to 48.0% in 1973.

These studies lend authenticity to the claim that minorities are frequently overly misrepresented in the special class for the mentally retarded. Reasons for this are many and varied, although it seems there are three primary factors: 1) culturally biased testing procedures, 2) the effects of stereotyping, and 3) teacher values and attitudes.

In the field of education in recent years, much emphasis has been focused on the effects of culturally biased testing. Opinions range the full spectrum from Arthur R. Jensen's idea that culturally discriminating tests are "just a myth" to R. J. William's development of the Black Intelligence Test of Cultural Homogenity (BITCH). Since he developed the BITCH to emphasize the need for re-evaluating current testing materials, Williams felt current tests were too white-middle class oriented. Morris (1977) reports that in the case of Diana v. California State Board of Education, the plaintiffs argued that the IQ tests used to gather information about placing students in special education programs resulted in a large number of Mexican-American students being labeled as retarded. The federal court ordered the school system to retest students in their primary language and English, and to renorm intelligence tests solely on a Mexican-American sample.

Other relevant research tends to support the idea that cultural biased testing is a very serious problem. Adler (1973) in a study aimed at data-gathering concerning the reliability and validity of test data from culturally different children, states that tests can be biased by being outside of the testees' experiences and that the language required by the test can be culturally oriented. The cultural language barrier seems to lie at the very root of the test bias issue. Attempts to translate English tests into Spanish have often come up with unacceptable results. Alley and Forte (1978) reported that on one test item in particular, the translation of "hot dog" into Spanish, literally translated means "a female dog in heat." The problem is often compounded by local dialects and language idiosyncrasies. The meaning for a given word or term for Mexican-American students might have an entirely different meaning for Puerto-Rican students.

Although teacher values and attitudes are suspected to be in part responsible for the over misrepresentation of the minority student in special classes, over-emphasis on test scores, particularly when the minority student is involved, seems to contribute greatly to the problem. Due to the many and varied factors effecting student testing, it seems very difficult to construct a culturally unbiased test, although this should be our ultimate goal. It does seem reasonable to accept that minority children's placement based on test scores, in the special classroom situation, creates an unnecessary and undesired situation. Schwebel (1968) writes, "if such grouping is a temporary measure intended only to accelerate the child's development, to help him overcome a limitation and advance more quickly, then of course it can be a desirable procedure. But when it is used to separate children on a relatively permanent basis, and give them education, presumably suited to establish intellectual limitations, then we must consider such action indefensible."

Teacher values, attitudes, stereotypes and the negative effects of labeling, all play an important part in the destruction of the positive self-concept of the minority child. The effect of the instructors attitudes on the minority child can be inferred from an article by Ornstein (1968) suggesting that teachers find it rewarding to work with students whose values are the same as theirs. Teachers usually judge the actions of disadvantaged youth whose values are different from theirs on a middle class scale. The minority child when placed in the self-contained special class and labeled as "special" by teachers often feels doubly discriminated against. This notion is supported by Kendell (1977), in which he found that reading achievement and self-concept of segregated and integrated EMR children was lower than that of regular

EMR children. This negative labeling of children with problems surely seems to weaken what is frequently already an unsure self-concept.

Preconceived stereotypes and teacher values frequently add to produce the negative effects of "labeling" the minority child. Zucker (1979) reports that in a study dealing with teacher attitudes and values concerning the placement of students in special classes due to racial and sexual determinants, that teacher attitude plays in important role in the placement of the student. Findings of this study show that in the two groups of fictional students past histories (the same, except one group was given Spanish surnames), no significant difference was found in the teachers' placement of students based on sex, but a significant difference was found on the basis of race, with Mexican-American students being placed in EMR classes at a much higher rate than that of Anglo children. Ross and Salvie (1975) in a study designed to examine the effects of teacher attitude concerning the placement of children in special classes based on physical attractiveness found that unattractive children were more likely to be placed in special classes than attractive children. These studies demonstrate that the academically marginal, unattractive minority child will have a higher probability of being assigned to special programs dealing with learning problems than any other student.

Implication For Teachers

Any teaching strategy that necessitates the separation of children from their peers because of ethnicity, social status, race, or other cited characteristics denies these children access to equal education opportunities. Most educators agree that children learn about themselves from other people, and it is especially from teachers that they learn about their intellectual ability

(Schwebel, 1968). Therefore, the student's aspiration level will be greatly influenced by the administrative structure of the classes and teacher expectation.

The major thrust of the curriculum after mainstreaming the urban minority child should be to provide teachers, school administration, and other school personnel with an insight into the social, cultural, political, economic and educational factors that affect the efficiency of the educational program; and to seek better instructional strategies suited for schools enrolling significant members from several cultural groups.

In order to meet the many and varied challenges which face teachers of mainstreamed minority children, many changes must be made in the curriculum, testing and assessment practices, and teacher values. In the following paragraphs are several suggestions for implementing changes which are aimed at alleviating specific problems involving mainstreaming and the minority child.

The model curriculum currently prescribed for a self contained public school classroom usually insists on uniformity of instructional strategies for all classes at the same grade level. This standard curriculum frequently forces teachers to work toward completion of a required amount of material within a specified time frame. Individual differences, special needs and interests of children, differences in learning styles, are all much more difficult to accommodate under rigid standard curriculum.

Although the problem of matching learning styles with frequently established curriculums is complex and sometimes difficult to address, we must prepare teachers to deal effectively with diversity. The "middle-class" orientation of most of our teachers has been the over riding factor

that has handicapped them in their ability to succeed in working successfully in a mainstreamed environment. Every effort must be made to select teachers who genuinely regard culturally different learners as worthwhile students. Administrators responsible for staffing mainstreamed classrooms owe it to the student, the teacher and the community to be sensitive in their selection of personnel that are intellectually able, emotionally stable and adept in dealing with their own values and diversity.

The idea of cultural "deprivation" has made it easy to blame learning problems on the child's background rather than on the deficiencies of the school, its curriculum, and a failure to match instructional mode to learner capabilities. Silverstein and Krate (1975) point out that for white middle-class children with poor reading achievement, the cause is assumed to be an inappropriate match between curriculum content and developmental level. Sources for poor reading achievement for lower socio-economic groups are sought in cognitive deficiencies connected with the student's background.

Schools must begin to recognize the deficiencies in a standard curriculum and allow teachers more flexibility in fitting instruction to the needs of the child. The teacher in turn has the responsibility of matching learning tasks to the developmental level, learning style, strengths, and individual needs of the learner.

As well as not allowing for individual differences, the curriculum is often irrelevant to children of minority cultures. In order to counter this deficiency, the curriculum must include multicultural content. This can be accomplished through accurate reporting of diverse cultural history, availability of literature which contains unbiased representation of minority persons, and an awareness on the teachers part of the value of contributions

by minorities. The most effective approach is an ongoing inclusion of information about minority cultures rather than a once a year unit on "Black Americans" or "American Indians."

Johnson (1975) suggests that a curriculum for minority children might include teaching strategies which provide academic results, developing and strengthening achievement motivation, introduce a program of group relations into the classroom life, teach about open system theory, and develop a positive relationship with parents.

Studies have shown that teacher attitudes and expectations of students greatly influence their achievement level. It is essential that teachers of minority mainstreamed children assess their attitudes toward those children and their expectations based on possible negative stereotyping. Re-education is necessary to change attitudes based on differences in physique or skin color from negative acceptance to positive acceptance so that differences are viewed in terms of uniqueness and not as deviant (Johnson, 1976).

One of the differences frequently encountered in minority students is their speech patterns. The National Council of Teachers of English made the following statement regarding Black English:

> "We affirm the students right to their own patterns and variety of language . . . the dialects of their nurture or whatever dialects in which they find their own identity and style. We affirm strongly that teachers must have the experiences and training that will enable them to respect diversity and uphold the right of students to their own language." (Tiedt, 1979, p. 101)

Parent involvement in a mainstreamed classroom is essential, "not for the purpose of trying to understand the living conditions" but for the purpose of trying to relate to the people who are significant in the child's life and attempting to agree on educational goals. This may be accomplished

through home visits, parent groups and family sessions (Johnson, 1976)

An appreciation and acceptance of the positive aspects of the child's background and home life will enhance the teachers' ability to work well with the child and the family.

Summary

Teachers need a real acceptance of, and a more thorough knowledge about, mainstreamed minority children. This acceptance and knowledge only can be gained by teachers if they are willing to question their own values and attitudes towards these students. In a classroom setting, some teacher values and attitudes are overly stated and taught. Others may be taken for granted and hardly ever talked about but are influenced directly and and indirectly through behavior. The teacher must realize that everything that he/she says or does in a classroom sets goals for the children that emphasize behaviors that may or may not be valued by the child or the parent. The teacher's role in setting the stage for the mainstreamed child is particularly significant for he/she holds the major share of their attention for many hours during the school day. Not only do the children focus on the teacher for a great period of time, his/her interaction with these youngsters may cause them to react negatively toward the school, their peers and to education.

Teachers of mainstreamed minority youngsters must learn to place more emphasis upon affective objectives. This in no way suggests that we downplay the importance of cognitive skills. However, instruction must be adapted to the ability of the learner and not just the concerns for the academic discipline. This can only be accomplished when teachers have

examined their personal attitudes and beliefs and are willing to accept divergent beliefs and attitudes of others.

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Beginning with Functional Literacy

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Beginning with Functional Literacy

Interwoven in the difficulties many children experience in school are problems with reading. The minimal objective for all members of society is functional literacy. Hopefully, reading instruction will take children beyond functional literacy to the point where they develop reading habits and interests which continue through the life span. The notion of functional literacy, however, provides a clue for the kind of reading experiences which children who have learning and behavior difficulties may need. It may be precisely in there being a lack of functions for reading within the classroom setting that makes reading a difficult and tedious task for many children. The orientation of this paper is that reading instruction needs first to develop functional reading ability. This functional literacy can then serve as the foundation for more advanced reading proficiencies. Such a view of reading acquisition draws heavily upon recent work in oral and written language development. A brief review of this foundation will become the basis for suggesting appropriate reading instruction of children with learning and behavior problems.

Theoretical construct of reading

There have been many exciting developments in linguistics and cognitive psychology within the past several decades which have broadened the view of language learning. From these developments comes a functional perspective of reading acquisition.

The basic premise of this perspective is that language is acquired most easily when the learner is immersed in social contexts where language serves meaningful purposes (Cazden, 1976). In acquiring oral language, children are immersed from infancy in social environments in which language is a primary means by which people accomplish things (Lewis & Freedle, 1972). Children are aware of language and its uses long before they are able to produce the correct adult forms. Even very young children participate in the communicative system, using vocalizations and apparently unintelligible utterances to communicate certain needs (Halliday, 1975). In order to facilitate communication with the significant others in their social networks, children acquire the correct semantic, syntactic, and phonological forms of the adult system of language. Indeed, the underlying basis of language and language learning is its use by social beings in meaningful contexts (Turner, 1974).

While there are some obvious differences between the forms of written and oral language as well as between their respective acquisition processes (Kavanaugh & Mattingly, 1972), the role of function is equally applicable to both (Smith, 1977a). Both written and oral language serve various functions in society. Harste (1980) has suggested that the process of reading acquisition parallels that of oral language acquisition. That is, in their natural, ongoing encounters with life, children are exposed to people using written language.

Through these meaningful encounters, young children gain information about print. An emerging literature confirms that young children use cues from the environment to give meaning to print within naturalistic settings (Bennett, 1972; Goodman & Goodman, 1979; Harste, 1980; Hiebert, 1978, in press; Ylisto, 1967). Many young children, at least from middle-class populations, also acquire specific information about speech-print correspondences as a result of these encounters with print (Hiebert, in press; Mason, 1980). Some preschoolers even become proficient readers through these environmental experiences (Clark, 1976; Durkin, 1966). However, most young children do not acquire formal reading proficiency as a result of this naturalistic exposure; they instead make the transition to formal reading in the school setting.

There is reason to believe, however, that an understanding of the functions of print gained from these naturalistic experiences may underlie success in beginning reading instruction. Smith (1977b) has argued that this functional understanding is particularly necessary given the abstractness of the beginning reading task in many instructional programs. Frequently, educators view the beginning reading task as a decoding one. The elements of language are extracted in this early instruction, that is, removed from any meaningful purpose or context. To illustrate, many beginning programs instruct children in speech-print correspondences by focusing on single, isolated sounds which have no meaning in that setting. According to Smith, unless children have

some understanding of print and its functions, they will view this task as incomprehensible.

Support for the suggestion that an understanding of the purposes and meaning of print underlies reading acquisition comes from a number of writers. From Vygotsky (1962) and Huey (1908) to Downing (1972) and Wadsworth (1978), writers have described the abstractness and lack of utility of the school reading task and have cited these characteristics as major stumbling blocks to children's reading acquisition.

There is empirical support for the importance of a functional understanding as an underpinning of reading acquisition. A number of investigations have shown that poor and good readers at the same grade levels differ in their perceptions of what reading involves. Poor readers tend to view the reading task primarily as a decoding process, while their more capable counterparts view it as a process of deriving meaning from the passage (Canney & Winograd, 1979; Johns, 1970, 1974; Myers & Paris, 1978; Tovey, 1976).

A functional model applied to the reading problems of children with learning difficulties

A functional model of reading acquisition has two major implications for instruction. First, in order to become successful readers, children need to understand what reading is and what it can accomplish. Second, reading proficiency is best facilitated in situations where print serves meaningful functions for children. These ideas seem particularly

relevant for instruction of children with learning or behavior problems.

In many beginning reading programs, teachers and program designers focus almost exclusively on certain skills as indicators of reading readiness and assume that children understand what underlies the reading process and its functions. If this assumption is correct, instruction should be founded on this basic understanding, for a maxim of education is that instruction should begin with what the learner knows. However, for many children, this assumption may not be valid. Children who encounter difficulties in beginning reading may not have very basic notions about print and its functions. Some children enter school having had little experience with print in their naturalistic environments. Adults with whom these children have contact may not use print extensively themselves, much less with the children. This lack of experience may be confounded by a lag in children's cognitive development. Other children simply may not have attended to print or its use in their environments.

Typical beginning reading instruction may further the confusion of children who have had little prior experience with print. Letter name knowledge, auditory discrimination, and visual discrimination are frequently considered prerequisites for conventional reading instruction (Downing & Thackray, 1971). The first step in conventional prereading or reading readiness instruction usually consists of instruction in letter

recognition. This often involves rote memorization of letter names. Learning letter-sound correspondences frequently forms the next instructional objective. Many programs focus on individual letter-sound relationships, isolating the discrete unit from any meaningful context. As Elkind (1974) has noted, the alphabetic principle in total isolation is an exceedingly abstract concept. Another initial component of beginning instruction is the learning of sight words, many of which are exceptions to speech-print generalizations and have multiple meanings, characteristics which can make the task for the uninitiated reader quite complex (Johnson & Pearson, 1978). There is little in this beginning instruction that is either intrinsically meaningful or serves any vital need for most children.

Furthermore, when children encounter difficulties in reading and are given remedial instruction, they are usually administered an even heavier dose of instruction which emphasizes the code rather than the meaning or functions of print. For some children, the end result of this meaningless and exceedingly abstract instruction is frustration. This either results in or confounds learning and/or behavior problems.

A functional reading program for children with learning difficulties

A functional approach toward reading acquisition suggests a very different instructional strategy than the one employed by many beginning reading programs. A functional approach

does not negate the need children have to acquire knowledge about speech-print correspondences. However, it places this learning within the context of meaningful use of print. When basing instruction upon a functional approach, the teacher's underlying criterion is the provision of meaningful opportunities for using print. This principle applies to instruction of all children but is imperative for children with learning difficulties. The same principle applies regardless of whether children's difficulties arise from learning disabilities, different linguistic backgrounds, or less than optimal home experiences with print. Furthermore, this principle applies at any level. Whether students are beginning kindergarteners or fifth graders who have repeatedly experienced failure in reading, teachers need to create reading experiences in which print is used for meaningful purposes.

A first step in a functional reading program is to involve children in using the print in their environments. The physical environment is saturated with print. Print appears on billboards, storefronts, traffic signs, containers, and television containers, to name but a few examples. While many young children seem to understand that this print is meaningful and serves various needs, some children may not. Evans, Taylor and Blum (1977) have shown that second graders who are poor readers recognize less print in environmental contexts than their same-aged peers who are proficient readers. If children do not have this knowledge, they need to have

experiences with such materials and gain this understanding. If children do have this basic understanding, it can become the basis for acquiring new information about print. Environmental print provides a rich source of meaningful material with which to introduce information about speech-print relationships.

Print on cereal boxes, pop bottles, peanut butter jars, milk cartons, detergent boxes, candy and gum wrappers, T-shirts, and cups from fast-food chains provides the material for initial instruction. Children should be encouraged to join in the search for occurrences of print in their environments. Such activity can make them aware of print and its uses and can allow them to contribute material for reading instruction which has meaning for them. Those occurrences of print which might be a bit too cumbersome to bring into the classroom (e.g., a stop sign, McDonald's sign) can easily be introduced through photographs (see Parnell, 1973). Situations can also be replicated in miniature (e.g., town with signs on storefronts and street signs).

Through instruction, children are progressively lead from this completely contextualized use of print to reading words in settings without this environmental context. Teachers need to use this environmental print to develop an understanding about speech-print correspondences. Letter names or speech-sound correspondences should <u>not</u> be taught in isolation. Rather, children should be given information about speech-

print correspondences in relation to environmental words. For example, the teacher can show children a number of cereal boxes. Pointing to the print on one box, the teacher asks the children what that word might be. If the children respond "cereal," the teacher carefully draws the children's attention to the specific words and their constituents. Other words can be identified which follow the same principles. For the beginning consonant "s,", for example, such a list might include stop, salt, Sesame Street, shop, sale, and Steelers. Materials can be tailored to the children. Young children may enjoy learning to read McDonald's, M & M's, and milk, while their older peers may feel more at home with TV Guide, Mork and Mindy, Popular Mechanics, and Kawasaki.

These environmental words need to become the basis for instruction of word families (see Johnson & Pearson, 1978 for an excellent presentation of instruction using word families). For example, once children know the environmental words "stop" and "shop," they can be introduced to other words belonging to that family, such as hop, chop, top, and mop. These new words should be presented in sentences and used in meaningful ways. Children may take turns writing or dictating sentences using these words and can read one another's sentences. Always the emphasis is on use within a meaningful context.

Many everyday events in the classroom also need to become the basis for using print. For example, standard chores

such as taking attendance and collecting lunch money are excellent opportunities for children to read one another's names. Names provide another meaningful source of material in the functional reading program. Labels on objects around the classroom can assist children in finding things as well as in developing reading proficiency.

In addition to these everyday classroom events, other situations where print is used to serve meaningful functions for children need to be created in the classroom. Reading recipes to make a snack or reading directions for an art project (e.g., making a paper airplane or a kite) provide real reasons to use print. Learning to read ads, TV guides, telephone directories, and catalogs are still other examples of functional reading situations which need to be created in the classroom.

Another integral part of the functional reading program is the production of written language. As researchers have documented (Clay, 1975; Ames & Ilg, 1951), young children have a desire to communicate through producing print, and in fact this experience appears to foster reading development (Durkin, 1966). Children need to have many varied, functional opportunities to write. Even the child with motor difficulties can easily produce print by using pre-formed letters (e.g., magnetic, crepe, sandpaper). Having real reasons for writing, beginning by writing one's name on paintings, cards, and messages to writing stories, letters,

diaries, and reports, is essential for becoming literate.

Summary

Applying a functional model of language to the reading instruction of children with learning difficulties means that teachers place a premium on meaningful purposes for using print. It is when reading is used for meaningful purposes that children not only learn to read but also see reasons for reading and develop an interest in it. This is surely the basis for a successful reading habit across the life span.

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Teaching Spelling and Writing Skills in the Mainstreamed Elementary Classroom

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Definitions

In this paper "spelling" includes letter and word recognition, both oral and written, word attack skills, and dictionary skills. "Writing" includes cursive and printing penmanship and beginning skills in creating writing.

Overview

Two viewpoints dominate the literature in the areas of teaching spelling and writing skills. The first is that the two skills--spelling and writing--are interrelated components that interact with other interrelated components to comprise the general area of communication skills (Jenkins et al., 1974; Owen, 1974; Lowenbraun and Affleck, 1976; Neff and Pilch, 1976; Musgrave, 1975; Roser and Jensen, 1978; Dale, 1979). Most of these authors tended to combine some or many language arts activities, whether oral, aural, or written, as inseparable subunits within the same basic skill area.

The second viewpoint is that spelling and writing skills can be separated, at least for classroom purposes, into subunits composed of specific skills related to spelling or writing as distinct from other communication skills (for example, Swift and Spivack, 1975; Haring and Schiefelbusch, 1976; Sapon-Shevin, 1978).

Whichever perspective they evinced, authors consistently recommended many of the same generic classroom management strategies and teaching techniques. Classroom management strategies included individualizing of instruction, skills and/or achievement level grouping, diagnosis and prescription, environmental modifications, and program planning.

Classroom teaching strategies most consistently advocated were peer tutoring, learning games, use of various media, team teaching, and motivation

strategies related to the specific tasks of spelling and/or writing.

The following sections deal with theory and practice as these relate specifically to spelling and writing in the mainstreamed classroom.

Spelling

According to Musgrave (1975), spelling is probably the most poorly taught subject in public schools. Haring and Schiefelbusch (1976) noted that as teachers are increasingly required to collect data and plot individual pupils' academic progress, they would do well to begin with spelling because it offers the potential for being the most systematically instructed and regularly tested of all academic skills. Peters (1979) pointed out that, with careful planning, spelling can provide an area where every pupil gains some competence, but that many teachers with learning-disabled children neglect the opportunity to involve these pupils in tasks leading to success in spelling. After reviewing research related to speech and spelling, Groff (1979) concluded that although there is no general cause-effect relation between speech and spelling errors, there is a direct relation between Black English and certain specific spelling errors.

Peer Tutoring

Jenkins et al. (1974) compared the effectiveness of small group instruction by the teacher with that of peer tutoring, in word recognition, word spelling, and oral reading (and multiplication), and concluded that learning disabled and mildly retarded pupils learn more efficiently with peer tutoring. Sapon-Shevin (1978) and Champagne and Goldman (1975) reported similar conclusions. Focusing on mildly handicapped pupils, Lowenbraun and Affleck (1976) advocated the use of peer teams for practice testing of spelling words, and peer assistance for pupils having difficulties with word recognition in spelling and reading.

Dale (1979) noted that peer teaching improves pupils' word attack skills and sight word vocabulary. As an outgrowth of studies of peer tutoring, Dale also advocated parental involvement in peer tutoring programs as a more effective way to help slow learners master basic spelling skills. Neff and Pilch (1976) and Zeitz (1978) recommended using older pupils as tutors for younger ones who need practice in spelling drills and skills; an added benefit of peer tutoring, of course, is the freeing of teacher time for other classroom needs.

Neff and Pilch (1976) described two types of peer groupings for tutoring--matched pairs, where partners similar in skills abilities work together at the same task, and heterogeneous groups of four or five pupils working cooperatively at self directing and self grading tasks.

Owen (1974) matched able and poor readers to create picture and spelling word stories. (Sample: The went to his .) Perlman and Dubrovin (1979) successfully used peer tutors to read spelling words to vision impaired children and to help train these children to use cassettes.

Teaching Strategies

Stuckless (1978) pointed out the need to provide a classroom spelling system permitting deaf pupils to acquire words through seeing, just as hearing pupils acquire them through hearing. Pollard (1977) found evidence that both non-hearing pupils and hearing pupils were better able to process word spellings when words were presented to them whole and intact, rather than in sequences of letter groups. These findings concurred with those of Withrow (1968, 1970) who noted that non-hearing pupils were better able to recall intact words than they were sequentially presented words. Yater (1977) recommended much repetition for hearing loss pupils and constant use of spelling words in conversational settings. Nix (1976) cautioned that sign

language should be used as a second language only, rather than as a normal means of communication by deaf pupils with normal hearing parents.

Groff (1973) concluded that the practice of locating little words in big words is particularly helpful to pupils with both reading and spelling problems. Urbani (1978) reported that magic markers are especially useful for highlighting specific sounds and letter blends within words. Parke (1979) found teacher use of exaggerated oral pronunciation and syllabication useful in helping many pupils study spelling words, particularly in group situations. The Creative Classroom (1978) suggested that the teacher reinforce pupils' listening and spelling abilities by slowly spelling aloud important classroom messages, pupils's names, and relevant questions. In turn, pupils spell aloud simple responses.

Musgrave (1979) maintained that most individual spelling needs are conceptual or phonic; hence the teacher must be prepared to deal with vocabulary growth, communication, and phonics in the spelling program. Siegel (1969), Wilson (1979), and Urbani (1978) also valued phonics training within spelling programs. Hardin (1978) devised a spelling approach based on phonics and memory. Groff (1979), however, found little evidence to link phonics with spelling needs. Cronnell (1978) advised teachers to differentiate between spelling-into-sounds and sounds-into-spelling skills. For many pupils these are distinctly different activities.

Neff and Pilch (1976) recommended that teachers gear the amount of seatwork to the amount of time individual pupils can sit and work independently. Spelling worksheets can be cut into strips by units and presented sequentially to those pupils who panic at the sight of whole worksheets. The authors favored short, frequent repetitions of specific spelling skills scattered throughout the day--spelling "passwords" to line up, enter or leave the room,

for example. They also advised the teacher to discuss with each pupil or spelling group the specific "cushion" or free time activities available when spelling tasks are completed before the allocated time has passed.

Kohl (1978) found that when he had pupils describe to him ways not to do spelling and writing activities in the classroom, they were motivated to find their own "best" ways to learn these skills. Owen (1974) reported that when pupils devised their own spelling drills, they were more likely to use them and to learn their spelling words. Both Owen (1974) and Harris (1978) achieved considerable success in fostering pupil attitudes toward and success in spelling skills by encouraging pupils to write classroom newspapers. Their pupils also improved these skills when they used them functionally in other ways, such as by writing notes to take home to parents about field trips, PTA meetings, and so forth. In these ways spelling (and writing) became relevant to events in the pupils' lives. Urbani (1978) used comic strips as a motivating "gimmick" to train pupils in spelling skills. Pupils cut and pasted the squares to show sequence of events, paraphrased meanings, substituted appropriate spelling words, and orally described actions taking place in the strips. Taylor, Artuso, and Hewett (1974) found spelling codes, ciphers and deciphering activities to be particularly intriguing for many pupils, especially reluctant spellers.

Mangieri and Baldwin (1979) found a significant relation between pupil ability to spell words and ability to understand the meaning of these words. Dictionary skills--locating spelling words in the dictionary, orally defining the words, writing the definitions, and preparing individual lists of problem words-- were stressed by Owen (1974), Harris (1978), Roser and Jensen (1978), and Urbana (1978). Owen (1974) encouraged pupils to select their own weekly spelling words from a list provided by the teacher. Wilson (1979) trained

pupils to generate their own weekly spelling words from those they needed to know and to compile a list of potential words for future use. Negin (1978) presented findings supporting the use of mnemonic devices that improve pupil spelling ability by linking the difficult parts of words to the correct spelling.

Letter reversal problems in spelling, particularly b/d and p/q/g, appear to be fairly common among pupils who have difficulty with spelling and writing. Haring and Schiefelbusch (1976) reported success with a short daily intervention for individual pupils whose specific reversal paroblem had been diagnosed. The teacher showed that pupil a three-letter word beginning with one of the reversed letters (e.g., "dam"), the pupil read the word aloud, named the initial letter, and wrote the word. The teacher showed the same word with the other reversed letter in the initial position ("bam"), and the pupil followed the same procedure, which was then repeated with the first word and again with the second. Once the routine was established, the entire process took about 45 seconds and was repeated several times each day. When the reversal was mastered in the initial position, the teacher prepared two more word lists to be used the same way. One list had the reversal letters in medial and final positions, and one featured them in two-syllable words. The pupil also used these words for penmanship practice. Owen (1974) recognized the letter reversal problem at this level and provided (p. 14) a list of classroom techniques devised by pupils to help themselves distinguish between b/d, p/q/g, and other reversals.

Many children with learning disabilities exhibit impatience and short attention spans, and for these pupils Swift and Spivack (1975) recommended short assignments broken into sequenced tasks to be completed one at a time. The authors warned against mixing instructions for inattentive or impatient

children. If correct spelling is being emphasized, the teacher should not give additional requirements such as neat handwriting or correct posture. Materials should be distributed to these children only after they have repeated the instructions given to the group. The teacher must review each completed task before another task is begun and should stress quality of work rather than speed or neatness. Inattentive, impatient pupils can have each task timed (the timer facing away from them) and can be trained so that if they finish before the time sounds, they recheck their work rather than proceeding to other activities. Swift and Spivack (1975) also noted that the teacher must consistently model for these children the kind of behavior toward which they are being trained--that is, thoughtful, careful behavior patterns, attentiveness, and self-control.

Haggan (1978) described a variety of processes and techniques devised by parents, teachers, and peers to enable a physically handicapped pupil adjust to classroom routines and assignments. When initially learning to write and spell, for example, the pupil used the chalk board rather than notepaper because his parents had improvised a clamp for his arm stub that would hold chalk.

Dunlop, Koegel, and Egel (1979) concluded that autistic pupils can be taught spelling skills individually, but that they must also be taught necessary skills for responding to group instruction in spelling, as in other areas. The authors pointed out, however, that few data are available on mainstreaming autistic children.

Media and Games

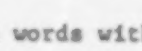
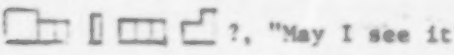
For deaf, hard of hearing, braindamaged, and vision impaired pupils, use of technology and media materials seems to be essential (Stuckless, 1978; Propp, 1978; Withrow, 1978; Galbraith, 1978; Miller, 1965; Perlman and

Dubrovin, 1979). These authors referred to the classroom use of captioned films, audio cassettes, transparencies, programmed learning materials and guides, television, amplification, tactile stimuli, pictures, and manual signs. All visual aids, as well as tactile aids, are essential for deaf pupils (Stuckless, 1978; Propp, 1978). Perlman and Dubrovin (1979) recommended training in the use of audio cassettes for vision impaired pupils to help them learn to record and check their own spelling lists.

Miller (1965) used matching materials, phonetic blending, typing, and printing techniques with a braindamaged pupil. Although typing appeared to be the most effective learning strategy, Miller concluded that teachers must sometimes accept less than complete success with some mainstreamed pupils. Lowenbraun and Affleck (1976) recommended use of the traditional media, especially audiotapes, for reinforcement of learning and retention skills of mildly handicapped pupils.

Neff and Pilch (1976) reported increased spelling achievement of pupils when they cooperatively used flash cards, spelling games, and drills. Owen (1974) suggested that underachieving spellers be trained to tape record their own spelling words in order to administer and grade their own spelling tests.

Taylor, Artuso, and Hewett (1974) described the successful use of numerous well prepared and frequently changed interest centers to increase the options for success of pupils with learning difficulties and of other pupils who would benefit from enrichment activities. These centers could be organized so as to facilitate dictionary and word attack skills, as well as promote the learning of spelling words. Meyer (1978) utilized a Spelling Olympics in such an interest center, where pupils individually completed various spelling "trials" in order to "win" Olympic medals. Bradley (1978) featured capitalization strategies, spelling skills, and word games in interest centers. Owen

(1974, pp. 37ff) suggested a wide variety of games useful for pupils who need to say, touch, and look at spelling words in order to learn them. Of special interest and benefit to pupils was the detective game where the teacher provided block outlines of selected spelling words alone and in simple sentences for pupils to match words with word patterns (e.g.,  , look; , aid;  ?, "May I see it?". Sapon Shevin (1978) described a variety of spelling games, including sequence games, concentration (using spelling flash cards), word-and-picture cards, and word dominoes. Grzynkowicz (1974, pp. 141-156) provided extensive lists of classroom games and techniques ranging from motor through auditory, social-emotional, visual, and multisensory. Siegel (1969) emphasized conversations and communication games--riddles, storytelling, rhythmic clapping, dramatics, and tongue exercises--for slow spellers, along with flash cards and other more traditional spelling learning materials. Younie (1967) also favored conversational games, along with oral and written self-selected personal word lists, dictionaries, and notebooks. Haring and Schiefelbusch (1967) and Zeitz (1978) as well pointed out the value of individual personal word lists and notebooks.

Block (1979) maintained that CAI spelling programs are based on sound conceptual theory and advised teachers not to avoid considering their use.

In addition to the more traditional media recommended for classroom instruction, many writers suggested using a variety of informal materials for mildly handicapped and learning disabled pupils--flash cards, letter-and-word tracings in salt or sand, sandpaper letters (Instructor, April, May, and September, 1979; Lowenbraun and Affleck, 1976; Owen, 1974; Neff and Pilch, 1976); empty (labeled) grocery boxes and cans, with corresponding pictures and alphabet letters for pupils to match; word plates, which are paper plates with pictures on the top half and corresponding spelling words written or

printed below (Hall, 1979); cereal letters, such as Alphabits, for forming spelling words, which, if correctly formed, may then be eaten (Instructor, March 1979). Grzynkowicz (1974) listed sources of materials (pp. 158-173) but warned that over-reliance on quantity of materials rather than quality of instruction is indicative of a form of teacher insecurity.

Program Planning

Musgrave (1975) decried the traditional Monday through Friday pattern of teaching spelling provided in basal texts as being inappropriate for classrooms containing pupils with conceptual or phonics problems in spelling. Owen (1974) concurred and suggested (p. 45) a variety of modifications to dispense with the monotony of the routine. Musgrave (1975) recommended an alternative program, a four-phase process to be implemented at the beginning of the school year after the completion of individual assessments of each pupil's spelling achievement level. In Musgrave's program, carefully sequenced moves implement achievement level groupings, whole group teaching, and specific skills groupings. The teacher initially groups pupils by achievement levels, which are then combined once a week with whole group activities (such as games, drills, dictionary skills, etc.), and finally with needed skills group teaching. Skills groups are formed anew each week after assessments of the various spelling skill areas (word attack, letter reversals, dictionary skills, etc.).

Gentry (1978) examined the differing rates at which pupils progress through the process of learning to spell, and described a normal four phase learning sequence ("prephonetic," "phonetic," "transitional," "correct,") concluding that each pupil, to progress from stage to stage, must have an individually planned program based on the current stage of operation. The recommended program involves considerable amounts of systematic instruction in spelling, reading, and writing.

Owen (1974) described a photo-kinesthetic-tactile (PKT) spelling program as a possible option for kinesthetic learners, pupils who have neither the auditory nor the visual discrimination necessary for learning spelling patterns. In PKT, the pupil's hand, mouth, and eye function together. Teacher supervision is critical during the initial learning of each new word in order to ensure that the pupil does not learn an error. The initial word pattern is provided by the teacher, who uses cursive writing, on chalkboard or paper, to form the spelling word. The pupil traces the word, saying each letter sound (not name) as it is being traced. Then the pupil finger-writes the word in the air, on a desk or table top, and finally with pencil on unlined paper. If it is done correctly, this word is filed in the pupil's alphabetized word box.

Swift and Spivack (1975) recommended that pupils with short attention spans be provided with a variety of interesting, not necessarily easy, activities that are built into the spelling program. They listed 47 auditory, 19 speech and language, 33 visual, and 12 multisensory activities for teacher use. Campanile-Happ (1979) described a year-long remedial program for shy, sensitive and frightened pupils; the program is geared to increasing pupil self-concept.

Neff and Pilch (1976) recommended a spelling program based on small groups with similar spelling skill needs. Noting that this program appeared to do away with individualized spelling work, they also urged the teacher to deal with every pupil on an individual basis at some time during each school day.

Assessment and Diagnosis

All authors urged two kinds of spelling assessments: initial diagnosis to determine the level at which each pupil operates, and continuing assessment to record spelling progress during the year. Lesiak et al. (1979) concluded that auditory and visual tasks assigned to pupils can aid the observant teacher to discriminate between good and poor spellers. Neff and Pilch (1976, p. 70) provided a diagnostic spelling checklist to help the teacher

plan for the correct spelling program for each child. Swift and Spivack (1975) commented that the teacher must diagnose the spelling error tendencies of pupils with short attention spans, and recommended the use of diagnostic tests like the Spache or the Gates-Russell. Lowenbraun and Affleck (1976) suggested that teachers observe and record pupil skills over time and make use, as well, of skill-specific spelling subtests (they provided samples of these subtests, pp. 22-25). Musgrave (1975) recommended teacher-prepared assessments of pupils' spelling achievement levels, using words from graded basal tests or standardized spelling tests. Siegel (1969) believed that diagnosis of spelling (and reading) needs should start with an assessment of each pupil's auditory and visual skills in discriminating among sounds (consonants, vowels, blends, syllables) and speech patterns. Younie (1967) noted that many slow learners in spelling spell the words the way they hear and say them, and concluded that the teacher must assess pronunciation and conversation skills of these pupils as well as their word attack skills.

Haring and Schiefelbusch (1976) directed teachers to locate learning disabled pupils with letter reversal paroblems by dictation of simple words containing the most prevalent reversal letters (b/d, g/q/p), and then, with additional appropriate dictation, to discover how often reversals occur and the most common positions for occurrence (initial, medial, final).

Classroom Environment and Climate

Explicitly or implicitly, all authors held teachers responsible for establishing and maintaining the classroom's physical surroundings and social-emotional climate in such a way as to promote pupil learning and well-being. Yaffe (1979) noted the many demands made on the teacher, especially by emotionally disturbed children, and observed that only well-prepared teachers with adequate support systems can function effectively in mainstreamed

classrooms. Vandivier and Vandivier (1979) summarized the multitude of goals and procedures the teacher must keep in mind and emphasized the urgent need to provide specialized instruction in the regular classroom.

Dale (1979) concluded that guided parental assistance, especially when involved with peer tutoring, improved the social-emotional climate of the entire classroom as well as benefitting slow learners in oral reading, word attack skills, and sight-vocabulary. Hoggan (1978) concurred, although his focus was on physically handicapped pupils. Neff and Pilch (1976) suggested team teaching practices to capitalize on teacher motivation, interests, strengths, time, and effectiveness. Miller (1965) warned teachers to accept the fact that pupil failure to learn spelling and reading skills can occur even under optimal learning conditions; teachers who expect total success all the time will rapidly become disillusioned and burn out.

Sapon-Shevin (1978) reviewed research in spelling and concluded that competition is harmful to pupils with spelling difficulties and recommended that teachers arrange the classroom environment so as to encourage pupil cooperation and eliminate competition. The Instructor (March and April 1979) outlined a variety of collaborative, noncompetitive spelling word games.

Taylor, Artuso and Hewett (1974) urged that teachers take the time to train pupils to make use of free time at classroom interest centers designed and provided to motivate learning skills, including spelling skills.

Yater (1977) advocated a classroom physically set up for deaf pupils who must sit where they can watch the teacher and other pupils talk. Acceptance and use of technological aids for non-hearing pupils is crucial for both teacher and pupils (Stuckless, 1978; Propp, 1978; Withrow, 1978), although it is interesting to note that Nix (1976) concluded that not all non-hearing children belong in mainstreamed classrooms. Teachers must be able to rely on

efficient and effective diagnosis of non-hearing pupils' physical needs prior to their entry into the classroom. Yater (1977) pointed out that the level of speech and spelling of pupils with hearing loss may be below that of hearing pupils, but that the teacher should not therefore excuse the non-hearing pupils from spelling assignments. To do so permits the emergence of second class citizenship and results in continued speech and spelling deficit.

Teachers must serve as models of reflective thinking, not impatient behavior, and produce quality in their own classroom work, exhibiting orderly and consistent habits in maintaining whatever spelling routines pupils are to learn (Swift and Spivack, 1975). Such consistency in modeling behavior is particularly important for pupils with short attention spans, those who have difficulty in concentrating on a given spelling task for an length of time.

Penrose (1979) suggested that teachers and pupils work together more effectively when they have cooperatively planned the purposes, methods and goals of the various subject area activities, including spelling. Neff and Pilch (1976) pointed out that teachers achieve better learning climates in speech and spelling activities when they offer praise for oral and written tasks done well, rather than criticism of tasks done poorly. The more quickly the feedback follows task completion, the more effective it is (Swift and Spivack, 1975).

Writing--Penmanship

Owen (1974) pointed out that handwriting is, for elementary pupils (and many parents), an emotion-laden activity that should be treated seriously and sympathetically by the teacher. Third graders, who generally learn to make the transition from printing to cursive writing during the academic year, have a double emotional load to bear. Hopkins (1971) noted that consistent feedback from the teacher concerning the mechanics of handwriting results in

improvement for many pupils. Teachers must, however, recognize reality. Some pupils will never develop fine or beautiful handwriting, and continued failure, particularly if accompanied by teacher criticism, will not improve their penmanship (Younie, 1967; Owen, 1974). In such cases, legibility rather than appearance should be the goal of penmanship classes (Younie, 1967).

Program Planning

Lowenbraun and Affleck (1976) outlined a five-step assessment process (p. 25) based on each pupil's skill in printing or writing every lower case letter, to be followed by a penmanship program for each pupil based on the letters with which that pupil is having difficulty. The authors stressed that all mildly handicapped pupils should be given realistic penmanship goals consistent with their abilities, and suggested a specific sequence for teaching each group of printed letters: first, straight line letters (l, i, t); then straight line and slant line letters (v, w, x, y, z); followed by circle and curve letters (o, c, s); and finally circle/line (a, e, d, b, j, g, q, p) and curve/line (h, k, f, m, n, r, u) letters.

Neff and Pilch (1976) provided a writing diagnostic checklist (p. 70) for teacher use so that pupils can be grouped for instruction according to needed skills. Younie (1977) prescribed printed letters rather than cursive writing for pupils with learning difficulties. Printed letters are more similar than writing to the letters pupils see in texts, and print is easier to form for pupils who lack rhythmic motor coordination. Younie recommended the transition to cursive writing only when a pupil's manual skills are capable of managing the rhythm and flow. On the other hand, Owen (1974) pointed out that some pupils who are developmentally behind others in motor control may find cursive writing easier to handle than printing, and these pupils should be taught cursive writing before being required to learn to print. Obviously the

teacher's assessment of pupil competencies is essential for planning a penmanship program.

Hopkins (1971) concluded that the amount of time spent on penmanship skills at one sitting need not be great. As the time for penmanship activities was decreased from 50 minutes to 30 minutes, pupil rate and accuracy of letter formation increased. Haring and Schiefelbusch (1976) found the same results, but only when the decrease in time allowance was accompanied by contingency scheduling. When the scheduled penmanship time was 30 minutes and pupils understand that they could work on specified "cushion" enrichment-type activities as soon as the writing assignment was completed and penmanship errors from the previous day corrected, then penmanship errors showed a significant decrease. Neff and Pilch (1976) suggested that the length of time for penmanship activities be kept brief initially for impatient pupils and those with short attention spans, timed with a kitchen timer, and increased by a minute or so at a time until the pupils reach a reasonable work span. They advised teachers to list the required penmanship tasks to be completed before cushion activities may be begun, and to tape the list to the pupil's desk, to be checked off item by item.

Lowenbraun and Affleck (1976) prescribed a pattern for the teacher to use with mildly handicapped pupils to facilitate their learning how to form each letter. First the pupil is to trace the letter on a solid line, then on a faded line, then on a dotted line. Next the pupil copies the letter, given the teacher's outline. Finally, given a verbal cue as to the letter to be formed, the pupil should be able to write that letter. The authors emphasized the importance of the teacher's modeling correct, consistent letter formation, as well as describing aloud the movements made ("up, down, across, down") as each model letter is written or printed on the blackboard.

Teacher Strategies

Creative Classroom (1978) reported success with penmanship activities through skywriting--forming specific letters in the air, with the teacher modeling--to rhymes, music, other rhythmic sounds. The Instructor (April 1979) suggested that the teacher use an opaque projector to throw letters (or words) on the chalkboard in order to permit pupils to trace the projections directly on the board. Hoggan (1978) successfully aided a boy with a clamp on his arm stump to make the transition from chalkboard writing to forming symbols on paper with a pencil by using an intermediate step. The pupil practiced letter formation using a paintbrush and water on white or yellow butcher paper. As the paper dried, penmanship errors became invisible, leaving no record of the many discouraging attempts necessary before correct letter formation was obtained.

Roser and Jensen (1978, Owen (1974), Whitney and Hughes ((1973), and Zeitz (1978) advocated penmanship activities directly related to pupils' own interests--for example, notes to be taken home to parents about field trips (Roser and Jensen, 1978; Harris, 1978); lists of observations made on field trips (Roser and Jensen, 1978); pupils' own taped or dictated stories transcribed to chalkboard or chart by the teacher, and copied by pupils as a penmanship activity (Owen, 1974; Whitney and Hughes, 1973; Roser and Jensen, 1978); pupils' individual lists of words often needed to use in their own creative writing or spelling (Roser and Jensen, 1978; Whitney and Hughes, 1973; Zeitz, 1978); creative rhymed and unrhymed bumper stickers (Whitney and Hughes, 1973), and many others. The Instructor (April 1979) suggested a period of absolute verbal silence, when all directions, questions, and comments are written by pupils and teacher. Nix (1976) concluded that this same activity is an effective way of using handwriting to reinforce correct

communication patterns for non-hearing pupils. Neff and Pilch (1976) pointed out that older pupils can give help in a tutoring situation to pupils having writing difficulties.

Musgrave (1975) recommended that the teacher place large charts around the classroom depicting the correct posture for writing at desk and chalkboard, and that pupils be helped to demonstrate these positions, individually and in groups. Pupils should also be expected to demonstrate appropriate procedures for pencil and paper placement when writing at a desk. Roser and Jensen (1978) suggested that the teacher prepare and post model signs, both cursive and printed, naming objects, areas, learning centers, etc., for pupil reference. Urbani (1978) successfully directed pupils to study and copy different lettering styles from comic strips.

Hopkins (1971) advised teachers to schedule individual penmanship practice times for pupils having difficulties with particular letters or letter combinations, and emphasized that penmanship practice sessions should be devoted solely and entirely to those letters with which the pupil is having difficulty.

Owen (1974) noted that pupils developmentally slow in motor control are confused by lines. These pupils should be permitted initially to practice on the chalkboard and on unlined paper, making letters as large as they wish. By mid-January or so, most such pupils should be ready for primary tablets.

Some pupils find letter directionality difficult, probably because although writing is done from left to right, some letters start toward the left before going right (e.g., d and a). Such pupils are unable to switch directions easily. They can be taught to use completely left-to-right letter formations, forming all round letters clockwise, retracing parts in order to move to the next letter (Owen, 1974). When the teacher has diagnosed a

pupil's specific areas of confusion, that pupil requires special training--for example, with letter reversals--and with teacher encouragement can often develop a personal and highly individual method for solving letter formation problems (see Owen, 1974, p. 14).

Writing--Beginning Creative Writing

Two major areas were dealt with in the literature--first, encouraging pupils to think creatively, and second, encouraging them to transcribe their creative thoughts. In every case, the consensus was that the writing process was a rather natural outcome when pupils were successfully motivated to generate ideas. If these ideas were important to pupils, then the pupils would be more likely to want to write them down. Lists of classroom activities designed to catch and hold pupil interest and to result in creative writing activities were provided by Taylor, Artuso, and Hewett (1974); Whitney and Huges (1973); and Owen (1974).

Whitney and Hughes (1973, pp. 79-93) developed Learning Activity Packages (LAP's), groups of activities aimed at providing creative writing ideas for teacher use. Taylor, Artuso and Hewett (1974) focused on library interest centers where books, newspapers, dictionaries, comics, mimeographed papers, cassettes for individual taping of stories for later transcribing, and other motivating or supportive materials should be available for pupil use.

Owen (1974) pointed out that pupils with handwriting difficulties may find it difficult to put creative thoughts on paper, and suggested two techniques--(1) newspaper style, where the teacher helps pupils list questions to be answered in the story (who, what, when, how, why, where), and (2) polaroid-picture style, where the teacher (or pupil) lists in words or picture form all thoughts and ideas, as they occur, that relate to the story. Each thought or idea is listed on a separate line, and the paper list is cut into strips,

one idea per strip. The pupils stack the strips in topical piles, and sequence the piles in the same order as the story occurs. Then the pupils write using the stack of ideas and thoughts. Owen also urged teachers to train pupils to tape their own stories or story ideas for later transcribing, editing, and rewriting.

Kohl (1978) successfully used the idea of original birthday/greeting/get well cards, or cards sharing special days, as a creative writing unit. Harris (1978) found that a classroom newspaper spurred and maintained many pupils' creative writing efforts. Hopkins (1971) suggested three different creative writing settings--two days a week, the teacher starts a story (reading or telling it), pupils supply the ending; two days a week, the teacher provides interesting story titles, pupils write the story; one day a week, pupils write on any topic of their own choice. Nix (1976) noted that creative writing activities are especially important for non-hearing pupils for whom it is essential that they take part in order to practice their style of communication. Taylor et at. (1974) maintained that creative writing is an integral part of the classroom reading program and must not be slighted.

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Crisis Intervention : Behavior Management of Mildly Handicapped Children in a "Mainstream" Setting

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Crisis Intervention: Behavior Management of Mildly Handicapped Children in a "Mainstream" Setting

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The title of this summary is somewhat misleading, for the behavior management demands made on teachers by mildly handicapped children actually are no different than those made by so-called "normal" children. All regular classroom teachers have faced certain pupils who are unruly, disruptive, and/or defiant of the teacher's authority. The fact that a child has been given a handicapped label in nc way predicts that he or she will be a management problem. By the same token, teachers who have difficulty managing the behavior of normal pupils will experience problems with mainstreamed handicapped students. One potential difference is that mildly handicapped children, because of their history of failure in school and mismanagement by their parents and former teachers, may respond more catastrophically to a teacher's lack of classroom structure and failure to employ sound behavior management practices. However, handicapped children in general behave well in the classrooms of good teachers and behave poorly in the classrooms of teachers whose management skills are weak. The same observation holds for nonhandicapped pupils as well. Therefore, the principles and techniques discussed in this summary apply to <u>all</u> children and <u>all</u> behavior, and no attempt will be made to separate a set of procedures to be used with handicapped children exclusively.

Many of the skill areas summarized in other sections of this monograph affect behavior management. For example, it is obvious that pupil

behavior is affected by the teacher's ability to select and adapt curriculum appropriate to the needs of his or her students, to individualize instruction by adjusting expectations and materials to the student's level, and to teach skills which are relevant and meaningful to children's lives. These are necessary teacher competencies for effective behavior management. However, they are not sufficient in themselves. In addition, teachers should be well grounded in the principles of human behavior and in techniques for setting and accomplishing specific behavioral goals. A comprehensive presentation of these principles and techniques is far beyond the scope of this summary. Consequently, the present discussion will be limited to the technology of applied behavior analysis (ABA) which has proven successful in managing the behavior of children of all types and ages and in every imaginable educational setting. The range of ABA techniques whose effectiveness have been documented in controlled studies also is too voluminous for inclusion here. Interested readers should consult reviews by Nelson (in press) and Polsgrove and Nelson (in press). A word of caution is in order: Under no circumstances should specific ABA techniques be taught to teachers who do not have a thorough understanding of the principles upon which they are based. These techniques are a powerful set of tools, but they are easily misapplied by persons with limited understanding of the basic principles. This brief summary is by no means an adequate presentation of either the principles or the techniques of ABA. Therefore, teacher trainers and trainees should master these areas through reviewing such basic texts as Bandura (1969), Ferster, Culbertson and Boren

(1975), Miller (1980), or Sulzer-Azaroff and Mayer (1977), as well as through competent supervised practice in the implementation and evaluation of behavior management procedures.

This summary is organized in four sections. First, the principles of ABA will be presented briefly. Second, the goals of behavior management will be discussed. The third section describes classroom situations and practices which create management crises. Finally, specific guidelines for managing child behavior are presented.

Principles of Applied Behavior Analysis

The term applied behavior analysis implies that the practitioner is interested in more than the simple management of behavior. It implies an interest in understanding behavior and its functional relationships to environmental events (Baer, Wolf, & Risley, 1968). The behavior analyst therefore studies behavior in its immediate situational context. Specifically, stimuli which precede and follow behavior are examined. Diagramatically, the model may be represented as A→B→C, where A stands for antecedent stimuli, which precede behavior (B), and C designates those stimuli which occur predictably as consequences of the behavior (Worell & Nelson, 1974). The following principles describe how this model operates.

Principle I

Behavior is controlled by its consequences. This principle is the most central to ABA, yet it also is the one that is least understood. Most lay persons assume that behavior is controlled by preceding , or

antecedent stimuli. Consider the teacher who wants a child to sit down. S/he might say to the pupil, "sit down." This clearly is an antecedent (A) to the child sitting (B). If the child sits, it is obvious that the antecedent controlled his/her behavior. But what if the child doesn't sit down after receiving the instruction? The normal tendency is to repeat the command until it is followed, and many teachers do so, varying the intensity of their voices and providing accompanying gestures, threats, etc. Antecedent stimuli effectively control behavior only when they enable the behaver to discriminate that certain consequent stimuli will follow their behavior. Thus, the child is much more likely to sit if s/he knows there is a predictable relationship between sitting (or remaining standing) and consequent events. Antecedent stimuli facilitate such discriminations through repeated association with consequences. The child who has learned that sitting upon command will likely be followed with positive consequences, or that remaining standing is likely to result in aversive consequences, has acquired a discrimination. If he or sne sits upon request, this behavior is under antecedent stimulus control. Unfortunately, many teachers fail to provide predictable consequences to students who follow, or fail to follow, their instructions, and consequently, pupils learn to rely on other discriminative stimuli: how many times the command has been repeated, how loud the teacher's voice is, or how red is the teacher's face.

There are three possible ways in which consequences can affect behavior. Some consequences strengthen or increase the frequency of the behavior

they follow; others weaken or decrease behavior; while other consequences maintain preceeding behavior at a preestablished level. Neutral consequences have no effect on the behavior they follow. Only consequences which strengthen, weaken or maintain behavior have a functional relationship to that behavior. Moreover, consequences always are defined by their effects: strengthening consequences increase behavior, weakening consequences decrease it, and maintaining consequences keep behavior going at its current level.

Principle II

Behavior is strengthened or maintained by reinforcement. Reinforcement functions in two ways. Positive reinforcement has occurred when the presentation of a consequence maintains or strengthens behavior over time. It is important to remember that procedures, as well as consequences, are defined by their effects. For example, Madsen, Becker, Thomas, Koser, and Plager (1968) found that when first grade teachers told their pupils to sit down, higher rates of out-of-seat behavior occurred. Thus, the command to sit down, given when students were out-of-seat, actually served as positive reinforcement for out-of-seat behavior.

Behavior also may be strengthened or maintained if it avoids or terminates an aversive stimulus. This is called negative reinforcement. Examples of behaviors controlled by negative reinforcement include slowing down upon seeing a radar trap, closing the window to stop a draft, adjusting the water temperature before stepping into the shower, or sitting upon command to avoid a reprimand from the teacher. Negative reinforcement,

because it emphasizes aversive stimuli, promotes escape and avoidance behavior. An unfortunate aspect of using aversive stimuli is that escape and avoidance behaviors other than those the teacher intends may be strengthened. For instance, a child may learn to avoid reprimands by not coming to school. Therefore, the major emphasis in behavior management is on positive reinforcement.

Principle III

Behavior is weakened by removing the consequences which have been maintaining it. This process is called extinction. For example, if the teacher's attention has rather consistently followed a pupil's out-of-seat behavior, and the teacher withholds his/her attention each time the child is out of seat, such behavior will be weakened over time. However, for extinction to work, the teacher must know which consequences have been supporting the behavior, and these consequences must be under the teacher's control. Out-of-seat behavior, for instance, may be maintained by reinforcement provided by the peer group instead of (or in addition to) teacher attention. If this is the case, ignoring out-of-seat behavior probably will have little effect. Such examples emphasize the analysis component of ABA, for only through careful study of antecedents, behavior, and consequences can the teacher understand their interrelationships and apply appropriate procedures.

Teachers attempting to weaken behavior through extinction also should be aware that this procedure takes time. In fact, it is likely the teacher will see an immediate, but temporary, increase in the undesired behavior.

It is important for the teacher to hold his or her ground when this occurs, and give the procedure time to work. If it does not have an effect after a fair trial (the length of time it takes depends upon the child's past history of reinforcement for the behavior), another procedure should be attempted.

Principle IV

Behavior also is weakened by punishment. As in the case of reinforcement, there are two types of punishment. The first type involves presenting an aversive consequence immediately after a response has occurred (e.g., giving a verbal reprimand for out-of-seat). The second type involves removing a positive consequence following a response (e.g., taking away a minute of recess time or a token for out-of-seat). This type differs from extinction in that the consequence being removed is arbitrarily chosen, rather than being the consequence maintaining the undesired behavior. Also, something actually is taken away, rather than being withheld (Sulzer-Azaroff & Mayer, 1977). Just as with reinforcement or extinction, punishment is defined by its effects, and the teacher must analyze the procedure over a period of time to determine it's effectiveness. Thus, if verbal reprimands result in an increase in out-of-seat behavior, punishment has not been implemented.

Principle V

Consequences must consistently and immediately follow the behaviors they are meant to control, if they are to be effective. A planned, systematic relationship between a behavior and a consequence is referred to as a contingency.

While some contingencies in the environment are naturally systematic and predictable (e.g., failing to adjust the water temperature before stepping into the shower results in a rude awakening), many are not. A teacher may sometimes allow pupils to leave their seats without permission and at other times reprimand them. To the extent that such practices diminish the predictability of a contingency, so too is the teacher's control over behavior weakened. Consistency is one of the most taxing requirements of effective behavior management, but in the long run, effort expended here saves the teacher a great deal of frustration and suffering

Principle VI

Behavior also is strengthened, weakened, or maintained by modeling (Bandura, 1969). Modeling involves the alteration of one's behavior through imitating a model. Models may be live or vicarious, adults or children, and the behavior imitated may be appropriate or inappropriate. Children more readily imitate the behavior of models with high status, and of behaviors for which the model is reinforced. Conversely, if a model's behavior is punished, the same behavior is more likely to be suppressed by the imitator (Bandura, 1969). For this reason, it is important for teachers to consistently apply planned consequences to all students.

Although these six principles have been described separately, seldom are they applied in isolation. For example, behavior analysts often apply positive reinforcement to desired behavior (e.g., in-seat) and extinction to incompatible undesired behavior (e.g., out-of-seat). Again, the complexity of behavior analysis, and of behavior management interventions,

requires that practitioners be well versed in the above principles, as well as in data collection and evaluation procedures, before implementing any of the techniques described in this summary. An alternative is to have access to a consultant with demonstrated competence in the principles and techniques of ABA.

Goals of Behavior Management

The primary goal of behavior management, for handicapped or normal children, is to bring their behavior under stimulus control. This means that pupils should respond appropriately to antecedent stimuli (A) without always having to experience the consequences (C) of their behavior. For example, stimulus control over behavior has occurred when students respond to the request, "Take out your science books" by getting out the appropriate text, and not by leaving their seats, shouting, or daydreaming. The teacher who has stimulus control over pupil behavior will experience a minimum of crisis situations, and both teacher and pupils will work in an atmosphere that is orderly and productive.

The behavior of most children is at least partially under stimulus control by the time they begin public school. However, a significant number (both handicapped and "normal") do not respond appropriately to antecedent stimuli. The lack of stimulus control over their behavior greatly increases the probability of a crisis situation occurring. Therefore, the first task facing their teacher is to prevent management crises by bringing pupil behavior under the control of such antecedent stimuli as teacher directions and instructional materials. This is accomplished by systematically applying positive consequences to appropriate responses made in

their presence. For instance, if the teacher wants pupils' desks to be an antecedent stimulus for in-seat behavior, s/he should apply positive consequences (e.g., attention, praise, tokens) for students who sit at their desks, and different consequences (e.g., ignoring, verbal reprimands, loss of tokens or privileges) for students who aren't sitting at their desks. Developing stimulus control over the behavior of "problem" children requires many applications of systematic consequences. Often, the teacher must begin by reinforcing approximations to the desired behavior (e.g., praising a child for only a few seconds of in-seat behavior). Gradually, the teacher can increase the requirement for the reinforcement (e.g., praising only when the child has been in seat for a minute or longer), until the desired goal has been reached (e.g., the child remains in seat as much as the other pupils). The process of reinforcing closer and closer approximations to desired behavior must be carried out slowly and systematically, and the hierarchy of steps must be adjusted according to the behavior of individual children. This again emphasizes the importance of behavior analysis, and underscores the need for a thorough understanding of behavior principles and their application.

The specific management goals expressed by teachers include increasing such appropriate behaviors as attending to task, in-seat, academic performance in subject matter areas, as well as social skills. Teachers also are concerned about decreasing behaviors which are dangerous, disruptive, or nonproductive. The majority of pupils likewise want to achieve these goals, and therefore, it is prudent to negotiate with children when setting

expectations for classroom behavior.

Situations Which Create Management Crises

It is tempting to blame behavior problems on underlying "pathology" supposedly inherent in children who have been given a handicapped label, such as mentally retarded, learning disabled, or emotionally disturbed. As mentioned earlier, this is not the position taken by behavior analysts, and it certainly contributes nothing to handling the situation to place the blame on the child. It is true that children who have been reinforced for tantruming, defying authority, aggressing against others, or being non-compliant will exhibit such behavior in situations where other children will not, but the key to effective control of these behaviors lies in the teacher's ability to analyze and manipulate variables in the immediate environment; specifically, antecedents and consequences.

These same variables also happen to be responsible for most crisis situations. It may threaten teachers to learn that the classroom variables they control, or fail to control, account for much problem behavior, but this observation has been documented in a number of studies. For example, White (1975) and Thomas, Presland, Grant, and Glynn (1978) studied rates of teacher approval and disapproval, and found that most teachers gave disapprovals at much higher rates than they gave approvals. Both sets of investigators suggested that teachers are more reinforced for using disapprovals (i.e., by negative reinforcement; disapprovals quickly, though temporarily, terminate undesired child behavior). Thomas, et al., (1978) also conjectured that teachers feel that appropriate behavior

deserves little recognition.

Walker and Buckley (1973), and Walker, Hops, and Fiegenbaum (1976) investigated the rate of teacher praise and disapproval toward behaviorally deviant and non-deviant children, and also studied the child behaviors upon which these responses were contingent. They found that teachers interacted significantly more with deviant children, and that the majority of these interactions consisted of attending to inappropriate behavior. Walker (1979) observed that the outcome of negative teacher attention to acting-out children is an increase in inappropriate child behavior. Recall that Madsen et al. (1968) also found that teacher attention to inappropriate behavior (out-of-seat) in behaviorally "normal" children increased the rate of this behavior. Thus, teacher attention to undesired behavior, even though negative, functions as positive reinforcement for such behavior. Peer attention to this behavior also serves as positive reinforcement, as documented in studies by Buehler, Patterson, and Furniss (1966) and Solomon and Wahler (1973). In both of these studies, peer attention to inappropriate responses was observed to exert more powerful control over child behavior than the reactions of adults.

As Walker (1979) pointed out, the cumulative effect of disproportionate teacher attention to acting-out children's misbehavior, in addition to peer support and attention, is to strengthen inappropriate behavior patterns. The unfortunate result of this combination of events is a classroom situation in which the teacher becomes increasingly reliant upon progessively more aversive management practices (i.e., public scoldings, sending children to the principal's office, spankings, etc.). These

measures may have temporary suppressive effects for some children, but no effect, or a strengthening effect, on others, and are not likely to succeed in the long run, particularly if the peer group reinforces deviant behavior.

A common side effect of aversive teacher control is power struggles between the teacher and some, or all, pupils. Like adults, children react negatively to aversive management, and particularly if they sense that the teacher is reacting out of frustration or feels out of control of the situation, respond with even more intensive misbehavior. Thus, behavior management practices which are not carefully thought out beforehand, which involve little or no child input, and which consist largely of reacting negatively to inappropriate pupil behavior are to be avoided.

Another potential cause of crisis situations involves setting goals and/or selecting curricula which are inappropriate for particular children. On the surface, this may appear to be a problem unique to mainstreamed handicapped children. It is of course true that many such pupils flounder in the regular classroom when adjustments are not made to accommodate expectations and curriculum to their needs, which may differ considerably from their "normal" classmates. However, an alarming proportion of teachers fail to accomodate to the range of skills possessed by children who are not officially labeled as handicapped. Inappropriate expectations and/or curriculum generate failure experiences, which increase the probability of pupil frustration, dissatisfaction, and rebellion. Thus, the stage is set for the development of behavior problems. If the teacher

reacts inappropriately to problem behavior (i.e., as described above), a self-perpetuating cycle of crises may be initiated.

Guidelines for Managing Child Behavior

The ultimate key to handling behavioral crises is to prevent their occurrence in the first place. This is best accomplished by following the principles outlined above in everyday interactions with pupils. The following guidelines are illustrations of how problem situations can be handled; they are not an exhaustive set of all the behavior management techniques which could, and should, be attempted. The first three guidelines reiterate the preventative tone of this summary, in that they suggest how the teacher can structure the classroom to minimize the probability of a crisis situation occurring. The guidelines relating to handling a crisis are intended to provide the teacher with a framework for making on-the-spot decisions.

1. Set rules that are clear and fair. Negotiate with students to establish rules.
2. Let the pupils know what the rules are. (They should be positively stated.) Post if you like.
3. Consistently reinforce children who follow the rules.
4. If a rule is broken or child's behavior is inappropriate

   and

   a. The behavior is not disruptive or dangerous to the child or others

      1) Ignore--turn your back, avoid eye contact, etc. At

first you may tell the offender when you will attend (e.g.," Steve, I'll call on you when you are quiet and in your seat.")

2) Move in on a child who is engaging in an appropriate behavior (ideally, one near the offender, or a friend of the offender)--give reinforcement (praise, points, etc.) e.g., "Tim, I like the way you're working." (Optional: give Tim a point.)

3) As soon as the offender behaves appropriately (e.g., gets back on task) move in with attention, praise, points, etc. Be sure you indicate what the child is doing to earn it.

or

b. The behavior is disruptive or dangerous, or behavior persists after interventions in step a.

1) Confront the offender, give him/her the choice of returning to task and staying with group OR taking a voluntary timeout[1] in the classroom (e.g., "Gary, you may go back to work or take a five minute timeout in the corner to get ycurself under control.")

(a) Confront immediately. Don't wait until the pupil is out of control.

(b) Give the child the choice. Allow him/her the opportunity to exercise self-control first.

(c) Tell the child which rule s/he broke. If necessary, repeat yourself, but don't nag, argue, or do anything more than tell him/her the facts and options once. If s/he acts like s/he didn't hear or understand, proceed to the next step.

2) If the child refuses to decide, continues his/her inappropriate behavior, or is disruptive during classroom timeout:

(a) Ignore the misbehavior, if possible. Let him/her know the time won't start until s/he is exhibiting appropriate timeout behavior (standing or sitting quietly).

(b) Set a specified time (no more than five minutes) for timeout. Allow the student to come back to the group and try again if s/he is quiet for the timeout period. Do not let timeout go on for more than 15 minutes or impose timeout long after the misbehavior has occurred.

3) If more than one child is involved in any inappropriate activity.

(a) Separate the children as quickly as possible. Use different corners of the classroom or a vacant classroom for timeout.

(b) Once separated apply the procedures outlined above on an individual basis. Gear the intervention

to the child's behavior after s/he is separated from the others. Don't necessarily treat everyone alike.

5. Rules for implementation
   a. Children should be told the entire procedure. They should be well aware of the rules and consequences for breaking them before problems arise.
   b. Apply these procedures consistently. If you can't follow the rules, how do you expect the children to learn them?
   c. Keep careful records of timeouts and other penalities. If something isn't working after a fair trial, go to something else.
6. Praise, praise, praise.
   a. Don't get caught up in a lot of negative behavior yourself. Usually the majority of the students will be behaving appropriately. Give them your attention; praise them by specifically stating what behavior you're pleased with.

In closing, it should be emphasized that this summary will not adequately prepare teachers to implement behavior management interventions based on ABA. Teachers and teacher trainer who wish to become proficient in this technology should seek out the training suggested earlier. In addition, there are several available "methods" texts which provide specific examples of a variety of behavior management techniques (e.g., Haring & Schiefelbush, 1976; Sulzer-Azaroff & Mayer, 1977; Walker, 1979;

Worell & Nelson, 1974), in addition to such professional journals as Behavior Modification, Behavior Therapy, Child Behavior Therapy, Journal of Applied Behavior Analysis, and others.

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Mainstreaming: Implications for Regular Teachers and Special Education Teachers from Research in General Classroom Management and Teacher Effectiveness

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MAINSTREAMING: IMPLICATIONS FOR REGULAR TEACHERS AND SPECIAL EDUCATION TEACHERS FROM RESEARCH IN GENERAL CLASSROOM MANAGEMENT AND TEACHER EFFECTIVENESS

Apart from considerations of educational philosophy and social policy, the mainstreamed classroom presents the teacher with a wider range of the major academic and social variables associated with learners; and the mainstreamed student brings characteristics that are often perceived, whether rightly or wrongly, as the most difficult for the teacher to accommodate. Typically, teachers' doubts about mainstreaming and their differential attitudes toward specific types of exceptionality in the regular classroom form along two main dimensions: first, whether the needs of the exceptional child might require an undue amount of time and attention, and therefore, deprive other students and, second, whether the teacher actually has sufficient technical skill to provide and manage the proper instruction (Williams and Algozzine, 1979; Larrivee and Cook, 1979).

Both logic and law demand a program of instruction designed specifically for the mainstreamed pupil. Even though some regular whole class and small group activities may be appropriate for the mainstreamed pupil, not all will be. This, in turn, implies an increase in the number and types of activities incorporated in the classroom, a corresponding increase in ordinary logistical and managerial concerns, and the addition to the classroom of any problems of management peculiar to the mainstreamed pupil.[1] Quite

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[1]Hewett and Watson (1979) and Meyen and Lehr (1980) have analyzed the general management issues for regular teachers for various types of exceptional pupils likely to be mainstreamed.

simply, any curriculum designed for any type of student is worthless if it is not implemented adequately in the classroom; and no pattern of grouping students affects learning positively unless instruction is altered to accommodate it (Calfee and Brown, 1979). Thus, general classroom management skills--the structuring and organizing of learning activities and the peripheral activities that support them; the techniques of coordinating materials, space, time, and the behavior of students for learning[2]--are critical to the successful integration of handicapped students into the regular classroom.

The skills of classroom management have often been regarded as merely a set of low-level, commonsensical housekeeping duties; and, in the past, these skills have been regarded as much less important to learning than the content of instruction and the personal characteristics of the teacher. Too often, the matter of classroom management has been presented to future teachers as a collection of gimmicks and simple admonitions ranging from "be warm and enthusiastic" to "don't smile until Christmas." However, recent research in classroom management and the correlates of teacher effectiveness is beginning to support the body of folklore held by most teachers --that classroom management is important for learning and how to go about it--and organize

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[2]For a model or elaborated definition of classroom management, see Johnson and Brooks (1979), p. 41.

that folklore into principles by which the consequences of teachers' behaviors can be predicted and salient missing behaviors identified and developed.

The purpose of this article is to present for regular teachers and special educators in their work with regular teachers a review of research and bibliography on general classroom management and teacher effectiveness and a summary of implications for teachers of mainstreamed pupils. Quite simply, the regular classroom teacher who experiences undue difficulty in managing instructional time and pupil behavior in the mainstreamed classroom probably needs assistance with general management skills and a better sense of how to establish and vary structure and control for different types of pupils, whether handicapped or not.

Research in General Classroom Management

Interestingly, a major empirical perspective on general classroom management derives from the work of Kounin (1970) and his associates, who began with an interest in "mainstreamed" pupils. Kounin began with videotapes of half days in 30 self-contained classrooms in first through fifth grades, with each classroom selected to contain at least one child diagnosed by school and clinical professionals as emotionally disturbed. The original focus was on the possible effects of teachers' various desist styles on classroom behavior; however, no effects were found for variations

in desist styles, except that harsh, punitive overreactions to discipline problems apparently increased the anxiety level of all students in a class. An examination ex post facto of the videotapes indicated that teachers who were relatively effective and ineffective at keeping order could be distinguished and that the salient dimension was style of classroom management. The specific behaviors exhibited by the two groups of teachers were organized into several broad categories, which were confirmed by a subsequent study conducted in 49 first- and second-grade classrooms:

Withitness. The teacher actively monitors the classroom and demonstrates to students through her actions that she is aware of what is happening in the room. For example, a teacher demonstrates "withitness" when she reprimands the correct student rather than an innocent bystander and when she stops misbehavior or off-task behavior before it increases in severity and spreads to other students.

Overlapping. The teacher attends to more than one issue at a time when necessary. For example, a teacher continues working with one group and gestures to a student elsewhere in the room to stop misbehaving and return to work.

Smooth transitions and momentum. The teacher maintains the pace of learning activities and provides for orderly changes in learning activities and/or physical movement in the room. Examples of negative teacher behaviors include beginning one activity and then returning to a previous one,

abruptly abandoning an activity before it is completed, overdwelling on minor aspects (e.g., insisting on correct posture during seatwork), and interrupting students engaged in work.

Maintaining group focus. The teacher keeps all students aware of their personal involvement in and responsibility for learning activities. Kounin's examples include a number of techniques for "group alerting" (communicating that all are involved and any student may be called on to actively participate) and "accountability" (communicating that the teacher is aware of what each student is producing and holds each individual student accountable for his work or participation).[3]

Of particular importance to the teacher of mainstreamed pupils is Kounin's finding that the principles of effective classroom management listed above applied across the elementary grades and to both disturbed and nondisturbed children. Kounin, Friesen, and Norton (1966; replication and extension by Kounin and Obradovic, 1968) found that the degree of contagion of an emotionally disturbed pupil's misbehavior was directly related to the total amount of misbehavior in the class and that good classroom management "contained" the effects of a disruptive pupil. Additional support for the general principles and/or specific subcomponents

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[3]According to Brophy (1979, p. 735), the techniques of group alerting and accountability have the weakest support in research and may be irrelevant to, of minor importance to, or non-linearly related to time-on-task and consequent gains in achievement.

of classroom management conceptualized by Kounin may be found in studies such as Kounin and Doyle (1975); Brophy and Evertson (1974, 1975); Scott (1977); Good and Beckerman (1978); Anderson, Evertson, and Brophy (1979); Arlin (1979); and Ebmeier and Good (1979).

Greenwood et al. (1979) trained 50 teachers of mainstreamed pupils in grades one through three to apply systematic techniques of general classroom management. Positive changes in students' behavior between pre- and post-observations were uniform across the groups of mainstreamed pupils, nonhandicapped students identified by teachers as behavior problems, and total class groups.

Borg and Ascione (1979) taught systematic classroom management techniques derived directly from Kounin's work to nine teachers of fourth-, fifth-, and sixth-grade classrooms with mainstreamed pupils and observed 99 of their pupils. Comparison with a control group of eight teachers and 77 pupils indicated that the experimental teachers improved significantly on about half of the classroom management skills taught; the experimental pupils showed significant decrease in off-task and deviant behavior; and, although overall classroom order and work involvement improved, the effects of the management techniques seemed greater with nonhandicapped students than with handicapped.

Finally, if a mainstreamed pupil (or any unlabelled pupil, for that matter) should present severe behavioral or

academic problems, a number of researchers have reported the successful incorporation of programs of behavior modification, crisis intervention, and academic support aimed at individual children within the regular classroom management system (e.g., Morse, 1965; Madsen, Becker, and Thomas, 1968; Thorensen and Mahoney, 1974; O'Leary and O'Leary, 1977; Hops et al., 1978; Rothenberg et al., 1979; and Sclater, 1980). Ward and Baker (1968) found no deterioration in the behavior of other children in class as teachers diverted a small amount of their attention to reinforcing the positive behaviors of disruptive children, and Hall et al. (1968) concluded from observations that the application of behavior modification techniques to individual pupils did not interfere with regular classroom routines and that the eventual reduction of disruptive behavior actually produced more time for constructive teaching of all pupils. Johnson and Johnson (1980) have identified instructional techniques to maximize the social integration of handicapped pupils in the regular classroom; logically, the same techniques should increase the social integration of any pupils regarded as marginal by their peers.

Research in Teacher Effectiveness

At this point, it is necessary to consider the relationship between classroom management skills--the fact that a minimum of disruptive and off-task behavior and a maximum

of work involvement can be obtained in the classroom through the teacher's application of systematic management principles--and learning. That order and industriousness are observed in a classroom is not, in itself, evidence that students are learning; however, process-product research in teacher effectiveness has identified the amount of time students spend actively engaged in and attending to learning activities as the variable most strongly and consistently related to gains in students' academic achievement. From his analysis of the state of research in teacher effectiveness, Berliner (1976, p. 10) concluded that:

> the link [between teachers' behaviors and students' achievement] that must be considered is the behavior of the student in the instructional setting.
>
> We are now convinced that the mediating link so necessary to consider is a student's active time-on-task. If teacher questions, reinforcement, warmth, and clarity[4] are to affect outcomes, they can only do so by engaging and then keeping the student's attention. If the student will attend, the possibility of learning exists.

When interpreted in terms of Caroll's (1963) theoretical model of school learning, those classroom management

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[4]Teacher questions, enthusiasm, criticism, and clarity are variables with moderate to strong support in research as affecting students' achievement, cf. Rosenshine and Furst, 1973, who also identified "student opportunity to learn criterion material" as having strong support as a factor in achievement gains.

skills which lead to increased student time-on-task lead, in turn, to increases in students' gains in achievement by effecting a closer relationship between "time needed for learning" and "time allowed for learning." Techniques which improve "quality of instruction" by better communicating to the learner what he is to do/learn and how to proceed (e.g., clear structuring, sequencing, and pacing within tasks; smooth transitions between tasks) reduce the time needed for learning. Techniques which increase students' perseverance and attention to instruction (e.g., stopping disruptive and off-task behavior before it spreads; group alerting; holding students accountable) increase the time allowed, or the time actually used by students, for learning within the time limits of the school day and class period.[5]

The direct relationship between time-on-task and students' gains in achievement has been supported in investigations by Cobb (1972; frequency of specific task/non-task behaviors and general academic achievement--103 fourth graders); Samuels and Turnure (1974; proportion of on/off-task behavior during reading instruction and gains in word recognition--88 first-graders); McKinney et al. (1975; frequency of 12 specific task/non-task behaviors and gains on five standardized achievement subtests--90 second graders);

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[5]For discussion of the relationship between time-on-task and learning, see Bloom, 1976; Gage, 1977, pp. 92-93; and Corno, 1979a.

Wiley and Harnischfeger (1974; average number of hours of schooling received in 40 Detroit schools with statistical control for race and SES of student body and measures of verbal ability, reading comprehension, and mathematical achievement of students); Anderson, Evertson, and Brophy (1978; specific behaviors implemented by 17 experimental teachers and 10 control teachers, differences in time-on-task in reading, and reading achievement of first graders); and Borg (1979; amount of content in standardized units covered by teachers within alloted time).

Fisher et al. (1978) found that the amount of allocated time, the amount of time students were engaged in academic activities, and the amount of time students worked at relatively low error rates were positively related to increases in achievement for second and fifth graders in reading and mathematics. A number of other positive factors identified were subsumed under "more substantive academic interaction between teachers and students" (Filby, second paper).

A major study (McDonald, 1976a, 1976b) in which 97 teachers of second and fifth grades were observed and their students' growth in reading and mathematics measured, indicated that, although effective patterns of organizing instruction (e.g., group versus individual instruction) differed by subject matter and grade level, any practice that increased direct instructional time tended to positively predict achievement across the various analyses of data.

Time spent organizing for instruction was negatively related to achievement.

Observations of teachers and students in 163 first- and third-grade classes representing a wide range of instructional approaches and student characteristics (Stallings, 1976) indicated that achievement gains in mathematics and reading were related to the amount of time spent in reading and mathematics instruction, although specific instructional approaches differed in effectiveness.

A number of investigations have found formal (i.e., relatively highly structured, curriculum-centered, and direct) instructional methods superior to less formal, "open," or highly individualized methods in terms of students' gains in academic achievement in the elementary grades and, often, equal or superior in areas such as students' creativity and their attitudes toward school. For example, Bennett (1976, p. 156) concluded from a study of pupils in 37 third- and fourth-grade classrooms in England that the consistently low degree of teacher structuring and direction in informal classrooms was associated with low academic achievement, both high motivation and high anxiety among pupils, and no advantage in creative written expression. Other studies include Wright (1975; 100 fifth graders in two schools for achievement, cognitive, and personality variables); Becker (1978; evaluation of nine models implemented in Follow Through for basic skills, cognitive measures, and affective measures);

Ebmeier and Good (1979; 68 classes of fourth-grade mathematics for mathematics achievement); and Clark et al. (1979; high/low structuring-soliciting-reacting on content mastery of eight classes of sixth graders). Morrison (1979), in observations of 32 fourth-, fifth-, and sixth-grade classes, found no difference between high- and low-structured classes in students' self-reported satisfaction.

Studies reporting advantages for open, flexible methods in areas other than academic achievement include Solomon and Kendall (1976; six classes of fourth graders -- academic achievement, inquiry skills, creativity, attitude, etc. "Open" classrooms appeared to foster creativity.) and Stallings (1976; evaluation of seven models implemented in Follow Through for reading and mathematics achievement, nonverbal problem solving, independence, cooperation, etc. More flexible methods appeared to foster characteristics such as independence and behaviors such as question-asking and nonverbal problem solving. More formal methods were associated with higher rates of absenteeism).

Good (1979, p. 55) maintained that research is increasingly supporting <u>direct instruction</u> as the method most effective for teaching basic skills in early grades and defines direct instruction as;

> <u>active teaching</u>. A teacher sets and articulates the learning goals, actively assesses student progress and frequently makes class presentations

illustrating how to do assigned work. Direct instruction does not occur when teachers do not actively present the process or concept under study, when they fail to supervise student seatwork actively, or if they do not hold students accountable for their seatwork.

However, there are a number of indications that simplistic interpretations of existing research, especially interpretations leading to undue emphasis on only direct academic instruction and on teachers' skills in managing classrooms for work involvement, are potentially dangerous:

First, classroom climate--including the teacher's reinforcement techniques; the variety, appeal and relevance of activities; and even the nebulous "warmth" of the teacher--is a major factor in both students' behavior and their achievement. Factors such as the teacher's general likeableness, communication skills, and ego strength certainly impinge on classroom management (Brophy and Putnam, 1979, p. 188). As Dunkin and Biddle (1974, pp. 93-97) noted, directiveness must not be confused with lack of warmth in conceptions of educational variables.

Classroom climate appears to be an especially important element in the achievement of elementary students of low ability and/or socioeconomic status. For example, Stallings (1976) found that a high rate of praise was especially beneficial to the mathematics achievement of low-ability first

graders. Brophy (1979, p. 737) described the pattern of instruction which appears to be most effective for low-ability students thus:

> Teachers who are generally most successful in low-socioeconomic status/low-ability settings are . . . determined to get the most out of the students, but they usually do so by being warm and encouraging rather than more businesslike and demanding. They are more personal with the students, taking out more time from academics to try to motivate them or deal with their concerns; they praise and encourage much more often and minimize criticism (of poor work, not necessarily inappropriate conduct); and they move through the curriculum at a slower pace, allowing more time for practice to overlearning (but they still move at a good pace relative to other teachers working with similar groups). When they call on individual students during recitations, they are more likely to allow more time to respond or to provide help by giving hints or rephrasing the question than to simply give the answer or call on someone else.

In contrast, elementary pupils of high ability appear to benefit from the enforcement of relatively high standards of performance and occasional criticism of their work (although no type of student appears to benefit from the

expression of strong or constant negative affect). For example, Brophy and Evertson (1975) observed that effective teachers of high-SES second and third graders asked questions that were answered correctly about 70% of the time, while effective teachers of low-SES pupils asked questions that were answered correctly about 80% of the time. Also, students of high ability apparently achieve best under somewhat less structured instruction than do students of low ability, although a moderate amount of direction and structure from the teacher seems essential for all (Corno, 1979b). Peterson and Janicki (1979) found that high-ability fourth graders made greater gains in mathematics achievement when seatwork was organized in small groups for peer-assistance, while low-ability pupils made greater gains when all seatwork monitoring and assistance came directly from the teacher. The researchers suggested that high-ability pupils are better able to learn through explaining activities to other pupils.

When high- and low-ability students are in the same classroom, teachers unconsciously communicate differential expectations through a variety of behaviors (Brophy and Good, 1970). In particular, teachers' differential questioning behaviors and allocation of praise and criticism to the two groups, if the behaviors observed by Brophy and Good are typical of classroom teachers in general, may actually be contrary to maximum learning for both groups.

Second, maximum learning, and perhaps, maximum positive affective outcomes may be associated with moderate levels of structure and control in the classroom. As Brophy and Putnam (1979) noted, the benefits of the degree and specific form of restriction and direction of students in the classroom always must be weighed against possible costs in personal development and neglect of various types of learning.

Cantrell, Stenner, and Katzenmeyer (1972), in a study of 40 teachers of first grade, found that the group of teachers most effective in terms of achievement gains with low- and middle-IQ students, with no apparent loss in the achievement of high-IQ students, were the group most knowledgeable about behavior theory. In contrast to a group categorized as traditional authoritarian teachers, the most effective teachers had more positive attitudes toward children, were more positive and supportive toward students, used higher rates of praise, and were less likely to select authoritarian strategies for control. In contrast to the group of traditional nonauthoritarian teachers, the most effective teachers were moderately directive rather than nondirective.

In a study of 27 primary grade teachers who had consistent patterns of student gains on standardized achievement tests over three years, Peck and Veldman (1973a) found relationships between the judgements of classroom observers and teachers' scores on various psychological instruments which

did not relate in turn to students' gains on achievement tests. The researchers suggested that the results pointed to another type of effective teaching. They concluded,

> . . . Beyond some moderate point, it almost looks as though those who get children to learn the mechanical, atomized knowledge and skills tapped by standardized achievement tests might unwittingly deter other kinds of learning, creating a subtly depressing, low risk-taking atmosphere that could conceivably keep children from learning to cope vigorously, self-reliantly, and happily with problems of learning and living.

In a series of studies in elementary classrooms, Soar and Soar (1976) found a variety of linear and curvilinear relationships between measurements of teachers' structuring and control of thinking, the cognitive level of learning objectives, and students' gains in achievement. They concluded that the assumption that "more is better" does not apply to classroom control and structuring; rather, the greatest overall gains in achievement were associated with intermediate levels of control and structuring, with the greatest gains for low-level objectives being associated with relatively greater degrees of teacher control than higher-level objectives.

Based on research in group leadership and the relationships between parental styles of authority and child

development, Brophy and Putman (1979, pp. 194-199) characterized the most effective style of classroom leadership as "authoritative" rather than "authoritarian" or "democratic" (in the strict sense). The authoritative leader models ideals consistently, seeks input, and emphasizes demonstration and instruction much more than prohibition and punishment, while clearly retaining authority.

Implications for Regular Teachers and Special Educators

The research reviewed clearly indicates that regular classroom teachers of handicapped pupils, particularly if they are expected to use more multiple-group and less whole-class instruction, need a more highly developed sense of instructional time management, better skills in specific techniques for keeping groups of pupils and individual pupils on task, and increased ability to match degree of control and structure to pupil. The heavy reliance of teachers on traditional whole-class instruction and individual seatwork is well-known; what is not often noted is that, given a teacher's limited time and energy (and perhaps even limited skill in some cases) and given the standards by which a teacher's success is ordinarily judged, the whole class/seatwork method is the simplest way to minimize ordinary misbehavior and maximize content learning for the class as a whole. If the handicapped pupil is not to be left behind, put aside, or put out anymore, regular teachers and special

educators may expect to be more concerned with general classroom management issues. The encouraging fact--which must be communicated to regular teachers--is that the basic principles by which children can be lead to behave, apply themselves, and learn appear to be the same for all children and the variations for different types of pupils are, to a great extent, matters of degree.

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Values, Cultural Diversity and Classroom Practice: The Dilemma of Unfulfilled Expectations

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158
160

Abstract

Equal access to educational resources is a fundamental value in a democratic, pluralistic society and it has become in recent years the central focus and measure of effective schooling. This paper presents an anthropological perspective on the relationship between value commitment and schooling process. Cultural differences as a special challenge are considered.

Values, Cultural Diversity and Classroom Practice: The Dilemma of Unfulfilled Expectations

We are in the midst of a difficult and challenging period in public education. Schools are in one sense undergoing the ultimate test--whether or to what degree they can be meaningfully responsive to cultural heterogeneity and individual differences. The test is severe because we have allowed social-educational problems to accumulate until their consequences are so serious we can no longer ignore them. Many of these problems relate directly to issues of equal access -- or its variants, equal educational opportunity and least restricted environment.

Equal access to educational resources is a fundamental value in a democratic, pluralistic society but until recently it has served best the interests of white, middle class Americans. With the Brown v. Topeka Supreme Court decision of 1954 the federal government embarked on what has become a continuing process of redefining, expanding, and evaluating the role of equal access in the schooling experience of all children and youth. The process has evolved through legislation, court decisions, administrative agency guidelines, special program funding and the policies and practices of individual schools and school districts. While court decisions continue to elaborate on the parameters and requirements of equal access, the current focus is on the nature and efficacy of the remediative programs themselves. It is a focus made more pressing by increasing public disillusionment about program

achievements thus far--and by the inconclusive results of program evaluative research.

The burden of unfulfilled expectations--more particularly the school's response to cultural diversity--falls heavily and finally on the classroom teacher. The rest of us search for and involve ourselves in courses, programs, and activities, through which we can, we fondly hope, relate meaningfully to improvements in teaching practice. From the teacher's perspective the context of their experience is an uneasy equilibrium of contending voices. Each voice represents sufficient authority to command the teachers' attention; each has a vested interest in effecting improved teaching but the goals each is seeking are ultimately dependent on the performance of teachers. In a real sense teaching takes place within an organizational context that is hardly a paragon of rationalized efficiency but that at the same time strains mightily toward the ideal (Warren, 1975).

The value system of public education levies an ambitious schedule of expectations on schools and teachers. They are to address and deal effectively with individual, social, civic, and economic requirements and consequences of becoming an adult in our society. The problem is this value system (or ideology) often bears little relationship to the persistent patterns of behavior functional to school routine. To speak of discrepancies between reality and ideality may be simply to make a commonplace observation about imperfectly realized goals--a condition that characterizes most, if not all, professions and institutions. But although the disparity between reality and ideality is not peculiar to schooling it is comparatively more acute and complex because of the central, culture-affirming role schools and teachers perform. Margaret Mead's analogy is instructive (1949:437-440).

There is a workable, productive length between horses and wagon. The "system" doesn't work if the wagon tongue is too short or too long. The same holds for the relationship of behavior to values in a social system. Values should ask neither too little nor too much of a people. I make the point not to strike a pessimistic note but to emphasize that with equal access we should understand that we have to reconcile shortcomings as we seek success.

I turn now to selected and generally anthropologically-oriented studies on cultural differences as they relate to the schooling experience. I started this brief paper with comments on both the organizational and ideological context of teaching because from an anthropological point of view context is as important as process as one describes and seeks to explicate meaningful relationships among diverse and seemingly discrete phenomena. It is a perspective that I believe is peculiarly appropriate to considering the interaction of teaching practices and cultural differences.

The shortcomings I referred to earlier derive from the immense difficulty in identifying and systematizing teaching practices which are specifically responsive to variable cultural differences among minority children. There is no question about the existence of cultural differences and the conflicts/problems such differences create for minority children in traditional classrooms. Such problems develop in different areas, e.g., communication, social behavior, cognitive style, value systems. Sindell (1974:333-341) reports on the schooling experience of Cree (Mistassini) Indian children who move back and forth between home in the summer and residential school the rest of the year. At home they learn behavioral patterns and values which are functional to their later participation as adults in the traditional hunting-trapping life of their parents. School is different. Sindell finds the following

contrasts:

1. The children learn self-reliance and independence at home in their natural surroundings where there are few limits on their behavior. At school they have to learn to be submissive and dependent on others to satisfy almost all (schooling) needs.
2. Interpersonal relations at home emphasize close emotional ties and interaction with family and kin. In school the children's social ties begin to shift to shallow contacts with a large peer group of the same sex. The number of adults with whom children interact shrinks and they have to become more skilled at attention-seeking behavior.
3. Most tasks the children learn at home are accomplished cooperatively and contribute to the welfare of the whole group. Competition is the keynote of school life.
4. Inhibiting overt expression of aggression is highly valued in Cree culture. In school children learn to express aggression openly.

One can rationalize--or even dismiss such findings as irrelevant; i.e., my classroom isn't in a residential school 180 miles northeast of Montreal; I emphasize cooperation, not competition; I don't allow children to be aggressive. But the obvious point is that there <u>are</u> cultural traits, behaviors, and values which are maladaptive to schooling as we generally conceive it and have it organized.

To continue--reporting now on the schooling behavior of Indian children in a quite different setting. Guilmet's (1978) comparative study of verbal

and non-verbal behavior among a small group of Indian and Caucasian children in the Los Angeles area found the Navajo children to be less verbal and to spend much less of their time talking during individual work periods to peers (or to themselves). However, he found they speak to teachers almost as frequently as do the Caucasian children. He characterizes the Navajo children as teacher-oriented and the Caucasian children as peer-oriented. As a part of his research project Guilmet also examined instructor reaction to verbal and non-verbal styles among these children (1979). He found that teachers and aides attend to the Caucasian children more often than to the Navajo children.

Modes of communication that children from different cultural backgrounds bring to the classroom have, it is clear, important implications for success in school. Boggs (1972) studied a group of native Hawaiian children a great majority of whom performed well below national norms but who by the usual socio-economic criteria would one might predict do well in school. He was interested among other things in the response behavior of these children to teacher questions. He found, for example, that when called upon to answer a question in class, a child was likely to answer minimally, if he answered at all. When the question was addressed to another child or to the whole group, however, children who volunteered were more voluble. It was Boggs' hypothesis that it is basically unpleasant for a Hawaiian child to have a question directed to him by an adult even if it is an attempt at friendly conversation.

We are slowly developing a sophisticated body of research on cultural differences in the behavior of children in classrooms and schools. The dilemma such differences pose for educators Guilmet defines as follows:

> Should (teachers) 1) accommodate their instructional techniques to the traditional preferences of the culture of interest? 2) attempt to assimilate the children of another culture in the verbal learning pattern used for Caucasian children? or 3) attempt bicultural instructional strategies in bicultural classrooms? Further it is clear that bicultural education implies and means more than the use of diverse languages and preferred cultural interests. Indeed bicultural education seems to imply both the need to be sensitive to contrasting learning styles and the need to use diverse behavioral processes in instructing (1979:264).

The dilemma is, I hesitate to say, even more complicated. Within any ethnic/cultural group, and certainly among children as they proceed through school, there is a range of differences with regard to culture-or ethnic-specific behavior and attitudes. At the very time that we want to respond intelligently to cultural differences we need to guard against a presumptuous, patronizing even arrogant point of view that we can lock on to a "mean" cultural profile and instruct accordingly. Data on cultural differences are important sources of insight for teachers but their use must be filtered through a continuing process of inquiry in which the teacher comes to understand the schooling needs of each child.

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